

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

JILL STEIN, et al.,

Plaintiffs,

v.

KATHY BOOCKVAR, in her official
capacity as Secretary of the Commonwealth,
and JONATHAN MARKS, in his official
capacity as Commissioner of the Bureau of
Commissions, Elections and Legislation,

Defendants.

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: CIVIL ACTION
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: No. 16-cv-6287(PD)
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**DECLARATION OF ROBERT A. WIYGUL IN SUPPORT OF DEFENDANTS'
OPPOSITION TO PLAINTIFFS' MOTION TO ENFORCE THE SETTLEMENT
AGREEMENT**

I, Robert A. Wiygul, declare under the penalty of perjury pursuant to 28 U.S.C. § 1746
that:

1. I am an attorney at the law firm Hangley Aronchick Segal Pudlin & Schiller,
counsel for Defendants in this action. I submit this Declaration in support of Defendants'
Opposition to Plaintiffs' Motion to Enforce the Settlement Agreement.
2. Attached as Exhibit 1 hereto is a true and correct copy of a portion of Jill Stein's
twitter feed dated November 28, 2018, which was downloaded from
<https://twitter.com/drjillstein?lang=en>.
3. Attached as Exhibit 2 hereto is a true and correct copy of the transcript of the
Hearing that took place in this matter on December 9, 2016.
4. Attached as Exhibit 3 hereto is a true and correct copy of excerpts from the
Consensus Study Report of the National Academies of Sciences, Engineering, and Medicine,

Securing the Vote: Protecting American Democracy (2018), which was downloaded from https://www.carnegie.org/media/filer_public/34/9d/349d3207-d994-4838-8b79-5f8d88e0e412/nas_report.pdf.

5. Attached as Exhibit 4 hereto is a true and correct copy of a portion of Jennifer Cohn's twitter feed dated November 29, 2018, which was downloaded from <https://twitter.com/jennycohn1?lang=en>.

6. Attached as Exhibit 5 hereto is a true and correct copy of a press release from the Philadelphia Commissioners Office dated February 20, 2019, which was downloaded from https://files7.philadelphiavotes.com/announcements/2019-02-20-Philadelphia_City%20Commissioners_Approve.pdf#_ga=2.58593386.1950796126.1576181779-1264225452.1575516017.

I declare under penalty of perjury under the law of the United States of America that the foregoing is true and correct.

Executed on December 12, 2019.

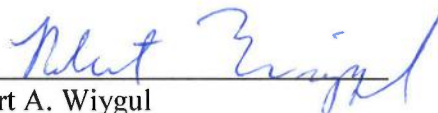

Robert A. Wiygul

EXHIBIT 1



Dr. Jill Stein 🌻🔵 @DrJillStein · 28 Nov 2018

BREAKING: Huge victory for election integrity! We just settled our [#recount](#) lawsuit in Pennsylvania for a guarantee that PA will use paper ballots by 2020, followed in 2022 by post-election audits to verify the vote before results are certified. Details:



PA Recount Settlement a Victory for Voters Everyw...

In a huge victory for election integrity, Jill Stein and plaintiffs settled their recount lawsuit in Pennsylvania for a guarantee that PA will use paper ballots by 2020, fol...

votingjustice.us



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EXHIBIT 2

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

JILL STEIN AND RANDALL REITZ : CIVIL NUMBER

V.

PEDRO A. CORTES, IN HIS OFFICIAL
CAPACITY AS SECRETARY OF THE
COMMONWEALTH AND JONATHAN MARKS
IN HIS OFFICIAL CAPACITY AS
COMMISSIONER OF THE BUREAU OF
COMMISSIONS, ELECTIONS,
AND LEGISLATION

: 16-6287

FRIDAY, DECEMBER 9, 2016
COURTROOM 6B
PHILADELPHIA, PA 19106

BEFORE THE HONORABLE PAUL S. DIAMOND, J.

HEARING

APPEARANCES:

MONTGOMERY MCCracken WALKER & RHOADS, LLP
GREGORY M. HARVEY, ESQUIRE
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PROCEEDINGS RECORDED BY STENOtype-COMPUTER,
TRANSCRIPT PRODUCED BY COMPUTER-AIDED TRANSCRIPTION

1 CONTINUED APPEARANCES:

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16 FOR THE INTERVENOR DEFENDANTS
17 ALL OF THE PENNSYLVANIA ELECTORS OF PRESIDENT-ELECT
18 DONALD TRUMP AND VICE-PRESIDENT ELECT MICHAEL PENCE

19 KENNETH L. JOEL, ESQUIRE
20 TIMOTHY E. GATES, ESQUIRE
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COUNSEL FOR THE DEFENDANT, PEDRO CORTES

1 THE CLERK: PLEASE REMAIN SEATED, COURT
2 IS NOW IN SESSION.

3 THE COURT: PLEASE BE SEATED, EVERYBODY.
4 GOOD AFTERNOON.

5 ALL COUNSEL: GOOD AFTERNOON, YOUR HONOR.

6 THE COURT: WE ARE HERE FOR A HEARING ON
7 THE PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTIVE
8 RELIEF.

9 MR. MAAZEL.

10 MR. MAAZEL: THANK YOU, YOUR HONOR.

11 THE COURT: GOOD AFTERNOON. I ASSUME YOU
12 WILL BE ACTING ON BEHALF OF THE PLAINTIFFS.

13 MR. MAAZEL: I WILL, PRIMARILY. A COUPLE
14 OF MY COLLEAGUES MAY DO A WITNESS, BUT YES, I WILL BE
15 THE PRIMARY PERSON.

16 THE COURT: JUST AS LONG AS YOU DON'T
17 ALLOW MR. HARVEY TO SAY ANYTHING. NICE TO SEE YOU, MR.
18 HARVEY.

19 MR. HARVEY: THANK YOU, YOUR HONOR.

20 MR. MAAZEL: YOUR HONOR, IF I MAY JUST
21 BRIEFLY INQUIRE AS TO OUR HOUR, FOR CROSS EXAMINATION OF
22 A WITNESS WE CALL, WOULD THAT BE COMING OUT OF OUR TIME
23 OR THE OTHER SIDE, SIR?

24 THE COURT: YOUR TIME. YOU ARE ASSUMING
25 THE OTHER SIDE KNOWS HOW TO CROSS EXAMINE AND WHAT THEY

1 WILL ELICIT WILL BE HARMFUL TO YOU. MY EXPERIENCE
2 HERE -- NOT WITH THESE PARTICULAR LAWYERS, BUT GENERALLY
3 INDICATES THAT SOMETIMES STUFF COMES OUT ON CROSS THAT
4 IS AS DAMAGING TO THE PERSON ELICITING IT AS IT IS
5 FAVORABLE. SO, YES. AND THE SAME GOES FOR THEIR
6 WITNESSES.

7 MR. MAAZEL: AND IF I MAY, I THINK I
8 WOULD LIKE TO RESERVE MAYBE 10 OR 15 MINUTES FOR
9 REBUTTAL AT THE END.

10 THE COURT: ABSOLUTELY.

11 MR. MAAZEL: THANK YOU, YOUR HONOR.
12 WOULD YOU PREFER I BE HERE OR --

13 THE COURT: YOU DON'T HAVE TO STAND.
14 WHEREVER YOU ARE MOST COMFORTABLE.

15 MR. JOEL: I'M SORRY, BEFORE WE -- I JUST
16 HAVE ONE QUESTION.

17 THE COURT: IDENTIFY YOURSELF.

18 MR. JOEL: I'M SORRY. KENNETH JOEL FROM
19 THE ATTORNEY GENERAL'S OFFICE ON BEHALF OF THE
20 DEFENDANT. I'M HERE WITH MY COLLEAGUE SUE ANN UNGER AND
21 ALSO MR. GATES FROM THE DEPARTMENT OF STATE.

22 THE COURT: GOOD TO SEE YOU, AGAIN,
23 MS. UNGER.

24 MS. UNGER: GOOD AFTERNOON, YOUR HONOR.

25 MR. JOEL: I JUST HAVE A QUICK QUESTION.

1 AS I'M SURE YOU'RE AWARE, WE HAVE RAISED SEVERAL
2 JURISDICTIONAL ISSUES. I DIDN'T KNOW IF MAYBE YOU WANT
3 TO HAVE A LITTLE ARGUMENT ON THAT OR MAYBE HAVE THE
4 PLAINTIFFS PUT FORTH WHATEVER EVIDENCE THEY WANTED ON
5 THAT FIRST.

6 THE COURT: I'M GOING TO LET THE
7 PLAINTIFFS PROCEED, AS THEY SEE FIT. I WILL RULE ON
8 EVERYTHING. MY INTENTION IS NOT TO HOLD ANYBODY IN
9 SUSPENSE. YOU HAVE GIVEN ME A GREAT DEAL OF MATERIAL,
10 WHICH I HAVE BEEN STUDYING AND HOPE TO CONTINUE TO STUDY
11 OVER THE NEXT TWO DAYS. I HOPE TO ISSUE A DECISION
12 FIRST THING ON MONDAY MORNING.

13 MR. JOEL: THANK YOU, YOUR HONOR.

14 THE COURT: MR. MAAZEL.

15 MR. MAAZEL: THANK YOU, YOUR HONOR, AND
16 THANK YOU FOR HAVING US HERE AT THIS HEARING TODAY.

17 AS YOU KNOW, WE REPRESENT MR. REITZ AND
18 JILL STEIN, A CANDIDATE FOR PRESIDENT ON THE GREEN PARTY
19 TICKET. THIS IS THE SECOND CLOSEST PRESIDENTIAL
20 ELECTION IN THE HISTORY OF PENNSYLVANIA. THE ONLY
21 CLOSER ELECTION IN THE HISTORY OF PENNSYLVANIA WAS
22 WHEN --

23 THE COURT: MR. HARVEY IS AN EXPERIENCED
24 HAND IN THIS COURTHOUSE AND UNDERSTANDS THAT OUR SOUND
25 RECORDING WON'T -- YOU DON'T EXIST IF YOU ARE NOT CLOSER

1 TO THE MICROPHONE. WHY DON'T YOU REMAIN SEATED. IT
2 WILL BE EASIER FOR ALL OF US TO HEAR YOU.

3 MR. MAAZEL: THIS IS THE SECOND CLOSEST
4 PRESIDENTIAL ELECTION IN THE HISTORY OF PENNSYLVANIA.
5 THE ONLY CLOSER ELECTION WAS WILLIAM HARRISON, WHEN HE
6 BEAT MARTIN VAN BUREN IN 1840. WE HAVE THOUSANDS OF
7 PEOPLE IN PENNSYLVANIA WHOSE VOTES ALMOST CERTAINLY DID
8 NOT COUNT. AND IN THIS PENNSYLVANIA ELECTION REGIME,
9 THERE IS REALLY NOTHING THEY CAN DO ABOUT IT. I JUST
10 WANT TO START BRIEFLY BY HIGHLIGHTING A COUPLE OF PEOPLE
11 WHO ARE IN OUR DECLARATIONS BEFORE THE COURT.

12 EXHIBIT 16 SETS FORTH THE DECLARATION OF
13 ANNA DURBIN, EXHIBIT 21, KIMBERLY KUPKA. THESE TWO
14 INDIVIDUALS LIVE IN MONTGOMERY COUNTY. THEY VOTED
15 THERE. AND AS THEY BOTH CAST THEIR VOTES, A "NO VOTE"
16 BUTTON KEPT APPEARING. THEY UNSELECTED THEIR
17 CANDIDATES, RESELECTED THE CANDIDATES, AND THIS "NO
18 VOTE" KEPT APPEARING. AND WHEN BOTH OF THEM CAST THEIR
19 VOTE FOR THEIR CANDIDATES, THE "NO VOTE" BOX WAS LIT UP.

20 NOW, THIS DRE ELECTRONIC MACHINES THAT
21 THEY USED HAVE NO PAPER TRAIL. THERE IS NO WAY FOR A
22 VOTER TO VERIFY THAT THEIR VOTE FOR THEIR SELECTED
23 CANDIDATE WAS ACTUALLY SELECTED. THEY CAN ONLY TRUST
24 THE MACHINE, AND THEY HAD VERY STRONG REASON TO BELIEVE
25 THAT THOSE VOTES DID NOT COUNT.

1 WE KNOW NOW FROM THE MONTGOMERY BOARD OF
2 ELECTION'S WEBSITE, WHICH IS EXHIBIT 46, THAT OVER 4,000
3 PEOPLE IN MONTGOMERY COUNTY WERE REGISTERED A NO VOTES,
4 DID NOT VOTE FOR ANYBODY. ALL 4,000 PEOPLE, 4,062
5 PEOPLE SUPPOSEDLY WENT TO THE POLLS, TOOK THEIR TIME TO
6 GO TO THE POLLS, FILLED OUT THEIR INFORMATION, PRESSED
7 THE BUTTON, DID EVERYTHING, AND SUPPOSEDLY DECIDED NOT
8 TO VOTE FOR A SINGLE CANDIDATE FOR A SINGLE OFFICE.
9 NOW, EITHER THAT IS THE CASE OR THE DRE MACHINES DID NOT
10 WORK, EITHER BECAUSE THEY WERE HACKED OR BECAUSE THEY
11 JUST DID NOT WORK.

12 SO WHAT COULD THESE VOTERS DO? THE ONLY
13 REMEDY THEY'D REALLY HAVE IN PENNSYLVANIA IS TO SEEK A
14 RECOUNT OR A RECANVASS IN THEIR PRECINCT. AND UNDER
15 PENNSYLVANIA LAW, THE DEADLINES FOR WHEN YOU CAN SEEK
16 RECOUNT DEPEND OR THEY ARE TIED TO HOW QUICKLY THAT
17 PARTICULAR COUNTY IS COUNTING THE VOTE. NOW EVERY
18 COUNTY IS DIFFERENT, EVERY ELECTION IS DIFFERENT, AND
19 THERE IS NO WAY TO FIND OUT WHEN THE DEADLINE IS.
20 MONTGOMERY DID NOT PUBLISH THIS. THE DEPARTMENT OF
21 STATE, WHICH IN THEORY SUPERVISES ALL OF THESE BOARDS OF
22 ELECTIONS, THEY HAD ABSOLUTELY NO IDEA WHEN THE DEADLINE
23 WAS TO SEEK A RECOUNT.

24 IN FACT, IN EXHIBIT 32 A, THEY SENT US A
25 CHART ON NOVEMBER 28TH, AND IN THAT CHART IT WAS

1 SUPPOSED TO SAY WHEN EACH COUNTY'S DEADLINE WAS WHEN
2 VOTES WERE COMPLETED OR NOT. AND FOR MONTGOMERY THERE
3 WERE JUST BLANKS. THEY HAD NO IDEA. IN FACT, THE
4 DEPARTMENT OF STATE DID NOT KNOW FOR AT LEAST 20
5 COUNTIES WHEN THE COMPUTATIONS OF THE VOTE HAD BEEN
6 COMPLETED AND THEREFORE WHEN THE DEADLINES WERE. SO
7 THESE VOTERS HAD NO IDEA FROM THEIR OWN GOVERNMENT WHEN
8 THEY SHOULD EVEN SEEK A RECOUNT. NO ONE IS TELLING
9 THEM, IT IS NOT PUBLISHED. EVEN THE DEPARTMENT OF STATE
10 DOES NOT KNOW.

11 SO WHAT DID THEY DO? THEY FILL OUT THESE
12 SWORN PETITIONS ASKING FOR A RECOUNT. THEY GO TO THE
13 TROUBLE OF GETTING THEM NOTARIZED. THEY DROP THEM OFF
14 AT THE BOARD OF ELECTIONS IN THEIR COUNTY. AND AT THE
15 BOARD OF ELECTIONS THEY ARE TOLD, AND THIS IS IN THEIR
16 DECLARATIONS, THEY ARE TOLD TOO LATE, THE DEADLINE
17 PASSED. AND SO WHAT ARE THEY TO DO? THEY JUST LEFT
18 THEM THERE AND HOPED THAT MAYBE THEY WOULD BE RECOUNTED
19 AND THEIR PETITIONS WOULD BE ACCEPTED.

20 THE COURT: MR. MAAZEL, ARE THERE ANY --
21 PRESENTLY, AS YOU AND I SPEAK, ARE THERE ANY RECOUNT
22 PETITIONS BEING CONSIDERED IN ANY OF THE 67 COUNTIES OF
23 PENNSYLVANIA?

24 MR. MAAZEL: YES.

25 THE COURT: HOW MANY?

1 MR. MAAZEL: IN TERMS OF COURT
2 PROCEEDINGS OR JUST AT ANY STAGE?

3 THE COURT: EVERYTHING. COURT
4 PROCEEDINGS, ELECTION COMMISSIONS, WHATEVER THE ENTITY
5 IS CALLED.

6 MR. MAAZEL: SO IN MONTGOMERY COUNTY,
7 THERE IS CURRENTLY --

8 THE COURT: YOU DON'T HAVE TO TICK THEM
9 OFF ONE BY ONE. COLLECTIVELY, HOW MANY?

10 MR. MAAZEL: IT MUST BE APPROXIMATELY SIX
11 OR SEVEN. I WOULD HAVE TO GO THROUGH EACH ONE.

12 THE COURT: THAT IS FINE. YOU'VE
13 ANSWERED MY QUESTION.

14 MR. MAAZEL: AND SO IN THE MONTGOMERY
15 SITUATION, THERE WERE MANY PEOPLE IN THIS POSITION, OVER
16 200 PEOPLE WHO DROPPED OFF PETITIONS, DID NOT KNOW THE
17 DEADLINE. AND THEN THE COUNTY BOARD -- THEY JUST SAT
18 THERE IN A PILE AT THE COUNTY BOARD. AND THEN SOMEONE
19 IN THE STEIN CAMPAIGN HAD THE GOOD SENSE TO THEN TAKE
20 THOSE TO THE PROTHONOTARY IN COURT AND SAY, WELL, MAYBE
21 THEY WILL ACCEPT THEM. AND THE COURT IMPOSED A \$269.50
22 FEE PER PETITION, IN TOTAL \$21,021, WHICH THE STEIN
23 CAMPAIGN PAID FOR ON BEHALF OF THESE VOTERS JUST SO
24 THEIR PETITIONS COULD BE HEARD SOMEWHERE.

25 AND THEN THERE WAS A COURT HEARING. NO

1 NOTICE WAS GIVEN TO ANY OF THE PETITIONERS UNTIL AFTER
2 THE HEARING WAS OVER. AT THE HEARING, MY ESTEEMED
3 ADVERSARY ARGUED THAT YOU COULD NEVER HAVE A
4 COURT-ORDERED RECOUNT ANYWHERE --

5 THE COURT: MR. TABAS?

6 WELCOME, MR. TABAS. NICE TO SEE YOU
7 AGAIN.

8 MR. TABAS: GOOD AFTERNOON, YOUR HONOR.

9 MR. MAAZEL: MY ESTEEMED ADVERSARY,
10 MR. TABAS, ARGUED THAT THERE COULD NOT BE A SINGLE
11 COURT-ORDERED RECOUNT IN THIS PRECINCT OR ANY PRECINCT
12 UNLESS THERE WERE COURT-ORDERED RECOUNTS IN 27,000 --
13 I'M SORRY, 9,158 DISTRICTS BROUGHT BY 27,474 PEOPLE.

14 IN SHORT, UNDER PENNSYLVANIA LAW,
15 ACCORDING TO THEIR ARGUMENT, UNLESS YOU HAVE A RECOUNT
16 PETITION IN EVERY SINGLE PRECINCT IN THE ENTIRE STATE,
17 YOU CAN'T HAVE ONE ANYWHERE. AND THAT IS AT EXHIBIT 31
18 IN THE TRANSCRIPT AT PAGE 26.

19 THE COURT THEN DENIED ALL THESE PETITIONS
20 WITHOUT EXPLANATION. AND THE NET RESULT OF THE
21 EXPERIENCE OF THESE VOTERS IN MONTGOMERY, AND
22 PARTICULARLY THE TWO I JUST MENTIONED, IS THAT THEIR
23 VOTES ALMOST CERTAINLY WILL NOT COUNT AND THEY HAVE NO
24 RECOURSE AT ALL IN PENNSYLVANIA.

25 THIS WOULD ALL BE EXTREMELY TROUBLING BY

1 ITSELF, BUT IT COMES IN THE CONTEXT OF A BROADER PICTURE
2 HERE, WHICH IS THAT WE HAVE MACHINES, DRE MACHINES AND
3 OPTICAL SCAN MACHINES, WHICH TOP COMPUTER EXPERTS ARE
4 ALL TELLING US, UNDER OATH AND OTHERWISE, ARE
5 VULNERABLE, THAT THEY ARE EASILY COMPROMISED, THAT THEY
6 ARE EASY TO HACK.

7 AND WITH YOUR HONOR'S PERMISSION, WHAT I
8 WOULD LIKE TO DO IS TO CALL DR. ALEX HALDERMAN TO THE
9 STAND, WHO IS ONE OF THE LEADING COMPUTER SURVEY --

10 THE COURT: I'VE ORDERED ALL THE
11 WITNESSES SEQUESTERED. PLEASE PRESENT DR. HALDERMAN.

12 MR. MAAZEL: THEN AFTER THAT, WE WILL
13 CONTINUE OUR PRESENTATION, IF THAT IS ACCEPTABLE.

14 THE COURT: IT'S YOUR PRESENTATION.

15 MR. CELLI: YOUR HONOR, I'M ANDREW CELLI.
16 I WILL BE EXAMINING THE WITNESS.

17 THE COURT: EXCELLENT. YOU ALSO DON'T
18 HAVE TO STAND UP IF YOU DON'T WANT TO.

19 MR. CELLI: IF I'M NOT STANDING, I CAN'T
20 SPEAK LOUDLY. ASK MY WIFE.

21 THE COURT: UNDERSTOOD.

22 DR. HALDERMAN, PLEASE HAVE A SEAT.
23 WELCOME.

24 DR. HALDERMAN: THANK YOU.

25 MR. CELLI: MAY I PROCEED?

1 THE COURT: YOU MAY.

2 MR. CELLI: DR. HALDERMAN, GOOD

3 AFTERNOON.

4 THE COURT: WHY DON'T WE SWEAR THE

5 WITNESS, IF YOU WOULDN'T MIND STANDING, DOCTOR.

6 J. ALEX HALDERMAN, PLAINTIFF WITNESS,

7 SWORN.

8 THE CLERK: STATE AND SPELL YOUR FULL

9 NAME FOR THE RECORD.

10 THE WITNESS: MY NAME IS JOHN ALEXANDER

11 HALDERMAN. J-O-H-N. A-L-E-X-A-N-D-E-R.

12 H-A-L-D-E-R-M-A-N. J. ALEX, FOR SHORT.

13 DIRECT EXAMINATION

14 BY MR. CELLI:

15 Q. GOOD AFTERNOON, DR. HALDERMAN.

16 A. GOOD AFTERNOON.

17 Q. DR. HALDERMAN, COULD YOU BRIEFLY DESCRIBE YOUR

18 PROFESSIONAL AND EDUCATIONAL BACKGROUND TO THE COURT?

19 A. I AM A PROFESSOR OF COMPUTER SCIENCE AND

20 ENGINEERING AT THE UNIVERSITY OF MICHIGAN. AND I'M THE

21 DIRECTOR OF SOMETHING CALLED THE UNIVERSITY OF MICHIGAN

22 CENTER FOR COMPUTER SECURITY AND SOCIETY.

23 I TEACH AND RESEARCH COMPUTER SECURITY,

24 INCLUDING THE SECURITY OF ELECTRONIC VOTING SYSTEMS AND

25 THE IMPLICATIONS OF STATE LEVEL ATTACKS.

1 I HAVE A PH.D. IN COMPUTER SCIENCE FROM
2 PRINCETON UNIVERSITY, AND I HAVE AUTHORED APPROXIMATELY
3 70 SCHOLARLY PUBLICATIONS IN THESE AREAS.

4 THE COURT: I HAVE READ THE DOCTOR'S
5 AFFIDAVIT AND THE VOLUMINOUS ATTACHMENTS AS WELL AS HIS
6 CURRICULUM VITAE. AND I ASSUME WITHOUT OBJECTION I'M
7 PERFECTLY PREPARED TO QUALIFY HIM AS AN EXPERT IN
8 FORENSIC COMPUTER SCIENCE. DOES THAT SOUND RIGHT?

9 MR. CELLI: WE WOULD ASK, YOUR HONOR,
10 THAT HE BE QUALIFIED IN COMPUTER SCIENCE AND IN
11 ELECTRONIC VOTING SYSTEM SECURITY. HE HAS BEEN
12 PREVIOUSLY QUALIFIED IN THOSE FIELDS.

13 THE COURT: THAT'S FINE. YOU ARE
14 QUALIFIED IN BOTH AREAS, DOCTOR.

15 THE WITNESS: THANK YOU, YOUR HONOR.

16 MR. CELLI: THANK YOU, YOUR HONOR.

17 BY MR. CELLI:

18 Q. DR. HALDERMAN, YOU'VE SUBMITTED A DECLARATION IN
19 THIS CASE WHERE YOU DISCUSS THE PHENOMENON OF CYBER
20 ATTACKS OR HACKING, AND I THINK YOU USE THOSE TERMS
21 INTERCHANGEABLY. DO YOU RECALL THAT?

22 A. YES.

23 Q. CAN YOU PLEASE TELL THE COURT WHAT YOU MEANT BY
24 CYBER ATTACKS OR HACKING.

25 A. WELL, CYBER ATTACKS AND HACKING ARE BOTH WAYS TO

1 DESCRIBE ATTEMPTS BY A MALICIOUS PARTY, THAT IS AN
2 ATTACKER, TO MANIPULATE THE BEHAVIOR OF A COMPUTER
3 SYSTEM, SUCH AS AN ELECTRONIC VOTING SYSTEM, IN ORDER TO
4 GET SOME BEHAVIOR THAT THE ATTACKER DESIRES.

5 Q. AND IN YOUR DECLARATION, DR. HALDERMAN, YOU
6 DESCRIBE THAT IN PENNSYLVANIA THERE ARE TWO DIFFERENT
7 ELECTRONIC VOTING TECHNOLOGIES THAT ARE USED, IS THAT
8 CORRECT?

9 A. YES.

10 Q. CAN YOU DESCRIBE FOR THE COURT WHAT THOSE
11 TECHNOLOGIES ARE?

12 A. THERE ARE OPTICAL SCAN VOTING SYSTEMS IN
13 PENNSYLVANIA WHERE A VOTER FILLS OUT A PAPER BALLOT AND
14 IT GETS SCANNED INTO A MACHINE THAT IS A COMPUTER VOTING
15 MACHINE. AND THERE ARE WHAT ARE CALLED DRE, OR DIRECT
16 RECORDING ELECTRONIC VOTING MACHINES. THESE ARE
17 COMPUTERS THAT RECORD THE ONLY RECORD OF THE VOTE IN A
18 COMPUTER MEMORY.

19 Q. THANK YOU.

20 HAVE YOU FORMED AN OPINION, DR.
21 HALDERMAN, AS TO WHETHER THE ELECTRONIC VOTING
22 TECHNOLOGIES THAT ARE USED IN THE COMMONWEALTH OF
23 PENNSYLVANIA ARE VULNERABLE TO CYBER ATTACKS OR TO
24 HACKING?

25 A. YES, I HAVE.

1 Q. AND WHAT IS YOUR OPINION ON THAT SUBJECT?

2 A. I BELIEVE THEY ARE VULNERABLE. IN FACT, I
3 BELIEVE THAT PENNSYLVANIA'S VOTING TECHNOLOGY ARE AMONG
4 THE MOST VULNERABLE VOTING SYSTEMS IN THE COUNTRY.

5 Q. WHAT IS THE BASIS FOR THAT OPINION, SIR?

6 A. WELL, PENNSYLVANIA USES TOUCH SCREEN VOTING
7 MACHINES AND OTHER KINDS OF DRE'S THROUGH MUCH OF THE
8 COMMONWEALTH. AND THERE ARE SIX KINDS OF THOSE MACHINES
9 IN USE IN THE STATE, SIX DIFFERENT MODELS. EVERY ONE OF
10 THESE MODELS HAS BEEN STUDIED EXTENSIVELY BY COMPUTER
11 SECURITY EXPERTS, INCLUDING ME. AND WE HAVE FOUND
12 VULNERABILITIES IN EVERY MODEL OF MACHINE THAT WOULD
13 ALLOW AN ATTACKER TO SUBVERT THE SECURITY OF THE SYSTEM,
14 TO SPREAD MALICIOUS CODE OR OTHER FORMS OF ATTACK INTO
15 THE VOTING MACHINES AND COMPROMISE THEIR SECURITY,
16 PERHAPS CHANGING VOTES, FOR EXAMPLE, OR EVEN SABOTAGING
17 THE MACHINES IN OTHER WAYS.

18 Q. COULD YOU TELL THE COURT IN LAY TERMS PRECISELY
19 HOW A CYBER ATTACKER OR HACKER WOULD ACCESS THESE
20 MACHINES AND WHAT THAT PERSON COULD DO?

21 A. WELL, THERE ARE TWO WAYS THAT -- TWO PRIMARY
22 WAYS AN ATTACKER MIGHT TRY TO COMPROMISE THE VOTING
23 MACHINES. ONE IS IF AN ATTACKER GETS PHYSICAL ACCESS TO
24 THE MACHINE, THEY CAN TRY TO CHANGE THE PROGRAMMING IN
25 THE MACHINE BY TAMPERING WITH THE STORAGE DEVICE, THE

1 COMPUTER CHIPS OR OTHER STORAGE DEVICE IN THE MACHINE.

2 BUT I THINK MAYBE MORE RELEVANT TO OUR

3 PRESENT PURPOSES, THERE ARE POSSIBLE, THERE ARE WAYS

4 THAT A REMOTE ATTACKER CAN ALSO INJECT MALICIOUS CODE

5 INTO THE VOTING MACHINES USED IN PENNSYLVANIA, EVEN

6 THOUGH THE MACHINES THEMSELVES ARE NOT DIRECTLY

7 CONNECTED TO THE INTERNET. AND THAT IS BECAUSE THE

8 MACHINES ARE PROGRAMMED BEFORE ELECTION DAY WITH THE

9 DESIGN OF THE BALLOT. THERE ARE FILES THAT ARE COPIED

10 INTO THE MACHINES THAT SAY WHO'S ON THE BALLOT AND WHAT

11 ARE THE RACES AND SO FORTH. AND THOSE FILES ARE CREATED

12 ON OTHER COMPUTERS, EXTERNAL TO THE POLLING PLACE, THAT

13 ARE OPERATED BY THE COUNTIES OR BY OUTSIDE VENDORS. IF

14 THOSE OUTSIDE COMPUTERS THAT ARE USED TO PROGRAM THE

15 BALLOT DESIGN ARE ATTACKED, AN ATTACKER CAN MANIPULATE

16 THE FILES THAT ARE COPIED ON TO THE VOTING MACHINES TO

17 DEFINE THE RACES AND THE BALLOT. THESE FILES ARE COPIED

18 INTO THE MACHINES WITH A REMOVABLE STORAGE DEVICE, LIKE

19 A USB STICK OR A CARD SIMILAR TO THE ONE IN YOUR DIGITAL

20 CAMERA, AND AN ATTACK CAN TRAVEL INTO THE MACHINES,

21 PRIOR TO THE ELECTION, ON THOSE CARDS THAT ARE USED TO

22 PROGRAM THE BALLOT.

23 Q. SIR, HAVE YOU FORMED AN OPINION AS TO THE

24 LIKELIHOOD THAT ELECTRONIC VOTING SYSTEMS IN

25 PENNSYLVANIA WERE SUBJECTED TO CYBER ATTACKS OR HACKING

1 IN THE 2016 ELECTION CYCLE?

2 A. YES, I HAVE.

3 Q. WHAT IS YOUR OPINION?

4 A. I THINK THERE IS A SIGNIFICANT POSSIBILITY THAT
5 THE MACHINES IN PENNSYLVANIA WERE SUBJECT TO SUCH AN
6 ATTACK.

7 Q. WHAT IS THE BASIS FOR THAT, DR. HALDERMAN?

8 A. WELL, LOOK, THIS ELECTION WAS DIFFERENT FROM
9 PREVIOUS PRESIDENTIAL ELECTIONS IN THAT THERE HAS BEEN
10 AN UNPRECEDENTED LEVEL OF CYBER ATTACK ACTIVITY AIMED
11 QUITE OBVIOUSLY AT INTERFERING WITH THE PRESIDENTIAL
12 ELECTION. WE HAD OVER THE SUMMER THE ATTACK ON THE
13 DEMOCRATIC NATIONAL COMMITTEE THAT LED TO THE SELECTIVE
14 LEAK OF THEIR E-MAIL. ATTACK ON JOHN PODESTA, HILLARY
15 CLINTON'S CAMPAIGN MANAGER, TO LEAK HIS E-MAIL AS WELL.
16 ATTACKS AGAINST THE VOTER REGISTRATION SYSTEMS OPERATED
17 BY TWO DIFFERENT STATES, ARIZONA AND ILLINOIS, AND
18 REPORTED ATTACKS AGAINST MANY OTHER STATES' ELECTION
19 SYSTEMS PRIOR TO ELECTION DAY.

20 THE FEDERAL GOVERNMENT, THE INTELLIGENCE
21 AGENCIES AND DEPARTMENT OF HOMELAND SECURITY HAVE LINKED
22 THESE ATTACKS TO A FOREIGN COUNTRY. THEY SAY ONLY HIGH
23 RANKING RUSSIAN OFFICIALS COULD HAVE ORDERED SUCH
24 ATTACKS.

25 NOW, WE ARE LIVING IN A TIME WHEN THESE

1 ATTACKS, CYBER ATTACKS LIKE THIS, STATE SPONSORED BY
2 FOREIGN GOVERNMENTS, ARE MORE AND MORE COMMON. YOU READ
3 ABOUT THIS EVERY DAY IN THE PAPER, BUT WE HAVE NEVER
4 SEEN A PRESIDENTIAL ELECTION THAT HAS BEEN SO AFFECTED
5 BY THIS.

6 COUPLE THAT, THAT WE KNOW A FOREIGN
7 GOVERNMENT IS TRYING TO INTERFERE WITH THE ELECTION,
8 WITH THE SURPRISING RESULTS. AND SO THE RESULTS OF THE
9 ELECTION, WHICH DID NOT MATCH PREELECTION POLLS THAT WAS
10 SURPRISING TO MANY PEOPLE AND I THINK THERE IS A
11 SIGNIFICANT POSSIBILITY THAT WE WERE ATTACKED. AND IF I
12 WERE AN ATTACKER, PUTTING MYSELF INTO THE POSITION OF AN
13 ATTACKER, AS I DO IN MY ROLE AS A SECURITY RESEARCHER, I
14 THINK PENNSYLVANIA IS CERTAINLY A STATE I WOULD WANT TO
15 ATTACK IF I WANTED TO CHANGE THE OUTCOME OF A
16 PRESIDENTIAL ELECTION.

17 Q. WHY IS THAT?

18 A. BECAUSE PENNSYLVANIA IS -- WAS A STATE WITH VERY
19 CLOSE POLLING DATA. SO YOU WOULD ONLY NEED TO
20 MANIPULATE A RELATIVELY SMALL FRACTION OF THE RESULT IN
21 ORDER TO CHANGE THE OUTCOME, AND BECAUSE PENNSYLVANIA
22 ALSO USES BADLY INSECURE TECHNOLOGY THAT HAS BEEN SHOWN
23 IN STUDIES TIME AND AGAIN TO BE VULNERABLE.
24 PENNSYLVANIA ALSO HAS A LARGE NUMBER OF ELECTORAL
25 COLLEGE VOTES. AND SO BY ATTACKING PENNSYLVANIA, I

1 THINK PENNSYLVANIA WOULD SIMULTANEOUSLY BE A RELATIVELY
2 EASY STATE TO ATTACK AND ONE THAT WOULD GET A LOT OF
3 VALUE FOR AN ATTACKER WHO WANTED TO SWING THE NATIONAL
4 OUTCOME.

5 Q. DR. HALDERMAN, CAN YOU DESCRIBE FOR THE COURT
6 THE KINDS OF MISCHIEF THAT COULD BE CAUSED BY A CYBER
7 ATTACK ON THE ELECTION SYSTEM IN PENNSYLVANIA?

8 A. WELL, I THINK THAT AN ATTACKER WHO WANTED TO TRY
9 TO MANIPULATE THE ELECTION SYSTEM IN PENNSYLVANIA COULD,
10 BY MANIPULATING THE SOFTWARE ON INDIVIDUAL VOTING
11 MACHINES, SPREADING FROM AN INFECTION INTO THESE
12 ELECTION MANAGEMENT SYSTEMS INTO THE INDIVIDUAL VOTING
13 MACHINES, COULD -- REALLY COULD ARBITRARILY CHANGE
14 VOTES. SO WE ARE TALKING ABOUT COMPUTER SOFTWARE THAT
15 IS CRAFTED BY AN ATTACKER RUNNING INSIDE THE VOTING
16 MACHINES BECAUSE IT'S SPREAD INTO THEM WITH THE BALLOT
17 PROGRAMMING.

18 NOW, THAT KIND OF ATTACK IS NOT LIMITED
19 TO -- IS VIRTUALLY UNLIMITED IN WHAT IT CAN DO TO THE
20 REPORTED RESULTS. FOR INSTANCE, I COULD VERY SIMPLY, TO
21 GIVE A SIMPLE EXAMPLE, I COULD PROGRAM IT TO SHIFT 5
22 PERCENT OF VOTES FROM THE REPUBLICAN CANDIDATE TO THE
23 DEMOCRATIC CANDIDATE, AND I COULD FURTHERMORE PROGRAM IT
24 TO TRY TO HIDE FROM PREELECTION TESTING.

25 Q. DR. HALDERMAN, YOU MENTIONED -- JUST A POINT OF

1 CLARITY, YOU MENTIONED THE ELECTION MANAGEMENT SYSTEM,
2 AND I THINK YOU MENTIONED THE VOTING MACHINES. COULD
3 YOU TELL THE COURT WHAT THE DIFFERENCE IS BETWEEN THOSE
4 TWO TERMS?

5 A. THE ELECTION MANAGEMENT SYSTEMS ARE THE
6 COMPUTERS THAT ARE USED TO CREATE THE BALLOT DESIGN
7 PROGRAMMING THAT IS GOING TO BE INSTALLED ON ALL THE
8 VOTING MACHINES ON ELECTION DAY AND ALSO USED TO
9 TABULATE VOTES FROM MANY DIFFERENT VOTING MACHINES AND
10 ADD THEM UP AFTER THE ELECTION. SO THIS IS A DISTINCT
11 COMPUTER OFTEN OPERATED BY A COUNTY OR OPERATED BY AN
12 OUTSIDE VENDOR FOR THE COUNTY.

13 Q. DR. HALDERMAN, YOU UNDERSTAND THAT DECEMBER 13TH
14 IS THE DEADLINE FOR PENNSYLVANIA AND OTHER STATES TO
15 DESIGNATE ELECTORS TO THE ELECTORAL COLLEGE, RIGHT?

16 A. YES, I DO.

17 Q. IN YOUR PROFESSIONAL JUDGMENT, WOULD IT BE
18 POSSIBLE TO DETERMINE THAT PENNSYLVANIA'S ELECTRONIC
19 VOTING SYSTEM HAD BEEN HACKED PRIOR TO THAT
20 DECEMBER 13TH DEADLINE?

21 A. YES, I DO.

22 Q. AND HOW WOULD YOU GO ABOUT DOING THAT?

23 A. WELL, IF YOU -- IF I WERE DOING THIS, WHAT I
24 WOULD DO, GIVEN THE LIMITED TIME, IS I WOULD CONCENTRATE
25 EFFORTS ON TWO THINGS. FIRST, WHERE WE HAVE PAPER

1 BALLOTS, I WOULD WANT TO SEE THAT AT LEAST SOME OF THOSE
2 PAPER BALLOTS ARE RECOUNTED, BECAUSE THE PAPER BALLOTS
3 REPRESENT SOMETHING THAT THE VOTER TOUCHED DIRECTLY THAT
4 COULD NOT LATER BE MANIPULATED BY A CYBER ATTACK. SO
5 JUST COMPARING IN A SAMPLE OF LOCATIONS WHAT IS ON THE
6 PAPER BALLOTS TO WHAT THE COMPUTERS REPORTED CAN TELL US
7 IF THE COMPUTERS WERE MANIPULATED. BUT BECAUSE MOST OF
8 PENNSYLVANIA'S VOTES ARE CAST WITHOUT A PAPER BALLOT,
9 THE DRE VOTING MACHINES THAT I MENTIONED THAT HAVE
10 THESE -- THAT HAVE BEEN SHOWN TO BE VULNERABLE IN
11 RESEARCH, ACCOUNT FOR SOMETHING LIKE 70 PERCENT OF VOTES
12 IN PENNSYLVANIA, WE NEED A DIFFERENT STRATEGY TO DETECT
13 CYBER ATTACKS AGAINST THOSE MACHINES.

14 AND WHAT I WOULD DO INSTEAD OF -- SINCE
15 THERE IS NOTHING TO RECOUNT, I WOULD TRY TO DO DIGITAL
16 FORENSICS ON THE ELECTION EQUIPMENT ITSELF. GIVEN THE
17 LIMITED TIME, I THINK THE MOST IMPORTANT PLACE TO DO
18 FORENSICS IS THE ELECTION MANAGEMENT SYSTEM COMPUTERS,
19 BECAUSE THEY ARE AT WHAT WE MIGHT CALL A CHOKE POINT
20 THROUGH WHICH A MALICIOUS ATTACK WOULD SPREAD TO
21 MACHINES AT THE PRECINCTS.

22 SO I DON'T THINK WE NECESSARILY NEED TO
23 LOOK AT EVERY ELECTION MANAGEMENT SYSTEM COMPUTER IN THE
24 STATE, BUT JUST A SAMPLE OF THEM WOULD BE ENOUGH TO VERY
25 QUICKLY BE ABLE TO DETECT A CYBER ATTACK IF ONE

1 OCCURRED. I MIGHT START WITH SAY THE LARGEST COUNTY
2 THAT USES EACH KIND OF ELECTION TECHNOLOGY BECAUSE THAT
3 WOULD BE -- IF I WERE THE ATTACKER, ONCE AGAIN, THAT
4 WOULD BE WHERE I WOULD TARGET TO GET THE MOST POTENTIAL
5 VOTES CHANGED FOR A SINGLE INTRUSION.

6 Q. APPROXIMATELY HOW LONG WOULD IT TAKE IN YOUR
7 PROFESSIONAL JUDGMENT TO CONDUCT A SAMPLING REVIEW OF
8 THE SORT YOU JUST DESCRIBED?

9 A. WELL, I THINK WE COULD REACH -- WE COULD
10 POTENTIALLY REACH A CONCLUSION THAT THERE WAS MALICIOUS
11 ACTIVITY IN AS LITTLE AS A DAY OR TWO. AND THEN IF
12 MALICIOUS ACTIVITY WERE DETECTED, THEN WE WOULD GO -- WE
13 WOULD HAVE TO DETERMINE, BASED ON WHAT IT WAS, WHAT TO
14 DO NEXT. BUT IF WE FOUND -- BUT WE COULD FIND EVIDENCE
15 OF TAMPERING VERY QUICKLY.

16 MR. CELLI: I HAVE NOTHING FURTHER.

17 THE COURT: THANK YOU.

18 MR. CELLI: THANK YOU, DOCTOR.

19 THE COURT: MS. UNGER.

20 MR. JOEL.

21 MR. JOEL: IS IT OKAY IF I SIT HERE?

22 THE COURT: ABSOLUTELY.

23 MR. JOEL: THANK YOU.

24 THE COURT: PLEASE PUT THE MICROPHONE AS
25 CLOSE TO YOU AS POSSIBLE, AND SPEAK UP.

1 MR. JOEL: IS THAT OKAY?

2 THE COURT: THAT'S GREAT.

3 CROSS EXAMINATION

4 BY MR. JOEL:

5 Q. DR. HALDERMAN, HI. MY NAME IS KENNETH JOEL.

6 I'M WITH THE OFFICE OF ATTORNEY GENERAL, AND I'M

7 REPRESENTING THE DEFENDANTS IN THIS CASE. I HAVE A FEW

8 QUESTIONS FOR YOU.

9 I LOOKED AT YOUR AFFIDAVIT, AND I DON'T

10 KNOW IF YOU HAVE IT THERE WITH YOU OR NOT BUT --

11 THE COURT: DO YOU HAVE IT?

12 THE WITNESS: I DON'T HAVE A COPY IN

13 FRONT OF ME.

14 THE COURT: I HAPPEN TO HAVE A COPY IN

15 FRONT OF ME. DO YOU HAVE AN EXTRA, MR. JOEL?

16 ALL RIGHT. YOU CAN HAVE MINE, DOCTOR. I

17 WILL TELL YOU WHAT. WHY DON'T YOU TAKE -- I WILL GIVE

18 YOU THE PLEASURE OF DEALING WITH THE BOOK I HAVE BEEN

19 DEALING WITH.

20 THE WITNESS: THANK YOU, YOUR HONOR.

21 THE COURT: YOU ARE QUITE WELCOME.

22 BY MR. JOEL:

23 Q. DOCTOR, I JUST HAD A FEW QUESTIONS ABOUT THIS

24 AND IT KIND OF RUNS THROUGHOUT. BUT IF YOU LOOK AT

25 PARAGRAPH 10, I'M SEEING, IF A FOREIGN GOVERNMENT, IS

1 **THAT CORRECT?**

2 A. **YES.**

3 Q. **ONE MIGHT EXPECT. THAT'S CORRECT?**

4 A. **YES.**

5 Q. **ATTACKERS MIGHT PROBE?**

6 A. **YES.**

7 Q. **TO FIND WAYS?**

8 A. **YES.**

9 Q. **MIGHT SPREAD?**

10 A. **YES.**

11 Q. **SOME STATES?**

12 A. **YES.**

13 Q. **NO VISIBLE SIGNS?**

14 A. **YES.**

15 Q. **WOULD EXPECT?**

16 A. **YES.**

17 Q. **IF YOU LOOK AT PARAGRAPH 12, JUST AS ANOTHER**

18 **EXAMPLE. INITIAL COMPUTER IS ALMOST?**

19 A. **WHERE ARE YOU READING THAT? I'M SORRY.**

20 Q. **SIX LINES DOWN.**

21 A. **YES.**

22 Q. **BEGINNING IN THE NEXT SENTENCE, IF?**

23 A. **YES.**

24 Q. **MIDWAY THROUGH THAT SENTENCE, CAN?**

25 A. **YES.**

1 Q. DOCTOR, WITH REGARDS TO -- AND I DIDN'T SEE
2 ANYTHING IN YOUR AFFIDAVIT OR YOUR DECLARATION ABOUT
3 THIS, DO YOU HAVE ACTUAL HANDS-ON EXPERIENCE WITH ALL OF
4 THE DRE'S THAT ARE USED IN PENNSYLVANIA?

5 A. I BELIEVE I HAVE TAKEN APART THREE OF THE
6 DIFFERENT MODELS AND EXAMINED MOST OF THE INTERNAL WIRES
7 AND COMPONENTS BY HAND MYSELF, YES.

8 Q. DOCTOR, AS YOU WERE TESTIFYING, I HEARD SOME
9 OTHER WORDS SUCH AS PERHAPS, POSSIBILITY. AM I CORRECT
10 THAT AS YOU SIT HERE TODAY, YOU HAVE NO EVIDENCE THAT
11 ANY MACHINE IN THE COMMONWEALTH OF PENNSYLVANIA WAS
12 COMPROMISED IN SUCH A WAY AS TO ALTER ANY VOTE?

13 A. THAT IS INDEED WHAT THE FORENSIC EXAMINATION I'M
14 TALKING ABOUT WOULD SEEK TO FIND.

15 THE COURT: SIR, PLEASE, DON'T ARGUE WITH
16 THE WITNESS. IS THAT A YES OR A NO?

17 THE WITNESS: I DON'T REMEMBER THE SENSE
18 OF --

19 THE COURT: ASK THE QUESTION.

20 MR. JOEL: HAPPY TO.

21 BY MR. JOEL:

22 Q. AS YOU SIT HERE TODAY, IT IS TRUE THAT YOU HAVE
23 NO EVIDENCE THAT ANY MACHINE IN PENNSYLVANIA, VOTING
24 MACHINE OR ELECTRONIC SYSTEM THAT YOU TALKED ABOUT, HAS
25 BEEN COMPROMISED IN SUCH A WAY AS TO ALTER ANY VOTE?

1 A. YES.

2 Q. AND I THOUGHT I READ SOMEWHERE IN THE MATERIALS
3 THAT YOU HAD A RECENT POST WHERE YOU WERE ASKED ABOUT
4 WHETHER OR NOT THE ELECTION RESULTS WERE HACKED. IS
5 THAT ACCURATE?

6 A. I DON'T BELIEVE IN WHICH I WAS ASKED.

7 Q. DID YOU HAVE A POST IN WHICH YOU SAID THE ANSWER
8 TO THAT -- WHETHER OR NOT THE ELECTION WAS HACKED, THE
9 VOTING MACHINES WERE HACKED, YOUR ANSWER WAS PROBABLY
10 NOT. DO YOU REMEMBER THAT?

11 A. YES.

12 MR. JOEL: I DON'T HAVE ANYTHING ELSE.
13 THANK YOU. I DON'T KNOW IF MR. TABAS DOES OR NOT.

14 MR. TABAS: JUST FOR THE RECORD, LAWRENCE
15 TABAS ON BEHALF OF THE INTERVENORS WHICH INCLUDES THE
16 PRESIDENT ELECT AND THE OTHER INTERVENORS.

17 CROSS EXAMINATION

18 BY MR. TABAS:

19 Q. MR. HALDERMAN, FOLLOWING UP ON MR. JOEL'S
20 QUESTION, ISN'T IT TRUE THAT YOU ACTUALLY WROTE AN
21 ARTICLE ON NOVEMBER 23RD, 2016 IN MEDIUM, IN WHICH YOU
22 STATED: WERE THIS YEAR'S DEVIATIONS FROM PREELECTION
23 POLLS THE RESULT OF A CYBER ATTACK?

24 PROBABLY NOT. I BELIEVE THE MOST LIKELY
25 EXPLANATION IS THAT THE POLLS WERE SYSTEMATICALLY WRONG,

1 RATHER THAN THE ELECTION WAS HACKED. END OF QUOTE.

2 A. YES, THAT IS WHAT I WROTE.

3 Q. SO MR. HALDERMAN, THEN, ISN'T IT TRUE THAT AS OF
4 TODAY YOU CANNOT STATE TO A REASONABLE DEGREE OF
5 CERTAINTY THAT THE PENNSYLVANIA VOTING SYSTEMS WERE IN
6 FACT HACKED FOR THIS 2016 ELECTION?

7 A. YES.

8 MR. TABAS: NO FURTHER QUESTIONS, YOUR
9 HONOR.

10 THE COURT: DOCTOR, IS THERE ANYTHING
11 THAT YOU HAVE TESTIFIED TO THIS AFTERNOON, OTHER THAN
12 THE RESULT OF THE VOTE ON NOVEMBER 8TH, ANYTHING AT ALL
13 YOU HAVE TESTIFIED TO TODAY THAT YOU DID NOT KNOW BEFORE
14 NOVEMBER 8TH?

15 THE WITNESS: DIDN'T KNOW BEFORE
16 NOVEMBER 8TH? NO, I DON'T THINK SO.

17 THE COURT: ANY FURTHER QUESTIONS?

18 MR. CELLI: JUST A QUICK ONE, YOUR HONOR.

19 THE COURT: VERY WELL.

20 REDIRECT EXAMINATION

21 BY MR. CELLI:

22 Q. DR. HALDERMAN, THE QUESTION ABOUT THE POST THAT
23 YOU WROTE, WHERE YOU SAID, WAS THE ELECTION HACKED,
24 PROBABLY NOT. COULD YOU EXPLAIN WHAT YOU MEANT WHEN YOU
25 SAID THAT AND WHAT IN FACT THE ARTICLE SAYS.

1 A. YES. SO THAT ARTICLE WAS TALKING ABOUT NOT THAT
2 THE -- SO THAT ARTICLE IS COMPARING TWO DIFFERENT
3 POSSIBILITIES. RIGHT? WE HAVE AN ELECTION THIS YEAR
4 THAT HAD A SURPRISING RESULT TO MANY PEOPLE. AND IN
5 FACT THE POLLS BEFORE THE ELECTION WERE WRONG IN A
6 SIGNIFICANT WAY. AND ONE OF TWO THINGS IS POSSIBLE.

7 EITHER THE POLLS WERE WRONG, RIGHT, AND
8 THE ELECTION RESULT IS CORRECT, AND I THINK THAT IS
9 SIGNIFICANTLY LIKELY. BUT I ALSO THINK A SIGNIFICANT
10 LIKELIHOOD EXISTS THAT THERE WAS A CYBER ATTACK
11 BECAUSE --

12 THE COURT: I'M SORRY. I'M SORRY. I
13 THINK THE QUESTION WAS, HOW DO YOU EXPLAIN -- WHEN YOU
14 WERE ASKED WAS THE VOTE HACKED, YOU SAID PROBABLY NOT.
15 I'M NOT HEARING AN EXPLANATION FOR THAT.

16 THE WITNESS: I'M SORRY. I AM GETTING TO
17 THAT. IF I'M BEING UNCLEAR, I APOLOGIZE.

18 THE COURT: NOT UNCLEAR PERHAPS, BUT YOU
19 ARE TAKING A LONG TIME TO GET THERE.

20 THE WITNESS: I'M SORRY, YOUR HONOR.
21 THERE ARE TWO POSSIBILITIES HERE, THAT THE POLLS WERE
22 WRONG OR THAT THERE WAS A CYBER ATTACK. AND I DO THINK
23 THAT THE MORE LIKELY OF THOSE TWO IS THAT THE POLLS WERE
24 WRONG. BUT I DON'T THINK THAT A CYBER ATTACK IS MUCH
25 LESS LIKELY THAN THAT. AND THAT IS WHY I PUT IT THAT

1 WAY. THE ENTIRE ARTICLE IS ABOUT WHY THE LIKELIHOOD OF
2 A CYBER ATTACK IS SO SIGNIFICANT THAT WE ABSOLUTELY NEED
3 TO INVESTIGATE THE AVAILABLE EVIDENCE IN ORDER TO MAKE
4 SURE THAT ONE DIDN'T OCCUR.

5 THE COURT: SO -- IF I'M WRONG, PLEASE
6 DON'T HESITATE TO CORRECT ME. AS I HEAR YOUR TESTIMONY,
7 YOU ARE SAYING IT'S MORE LIKELY THAN NOT THAT THERE WAS
8 NO HACK, BUT THAT STILL LEAVES A SIGNIFICANT POSSIBILITY
9 THAT THERE COULD HAVE BEEN A HACK.

10 THE WITNESS: THAT IS WHAT I'M SAYING.
11 YES, YOUR HONOR.

12 THE COURT: ANYTHING FURTHER?

13 CAN I HAVE MY BOOK BACK? THANK YOU,
14 DOCTOR. UNLESS YOU PLAN ON CALLING THE DOCTOR AGAIN, HE
15 IS FREE TO STAY IF HE WANTS TO OR HE CAN RETURN TO ANN
16 ARBOR. IT'S HIS DECISION.

17 MR. MAAZEL: THANK YOU, YOUR HONOR.

18 SO I WOULD LIKE TO CONTINUE WITH WHAT I
19 THINK IS -- ARE THE FUNDAMENTAL LEGAL PRINCIPLES, REALLY
20 FIVE, THAT I THINK GUIDE YOUR HONOR'S DECISION IN THIS
21 PRELIMINARY INJUNCTION.

22 THE FIRST IS THAT VOTERS DON'T JUST HAVE
23 THE RIGHT TO VOTE. THEY HAVE THE RIGHT TO VOTE -- THEY
24 HAVE THE RIGHT TO HAVE THEIR VOTE COUNT, WHICH IS THE
25 CLASSIC CASE IN A NUMBER OF OTHER U.S. SUPREME COURT

1 CASES .

2 THE COURT: MOVE THE MICROPHONE A LITTLE
3 CLOSER AND SPEAK INTO IT. WE JUST GOT ELECTRICITY HERE
4 IN PHILADELPHIA .

5 MR. MAAZEL: THANK YOU, YOUR HONOR .

6 THE SECOND PRINCIPLE IS THAT THE COURT
7 MUST WEIGH THE BURDENS ON THE RIGHT TO HAVE THE VOTE
8 COUNT VERSUS THE PRECISE INTERESTS IDENTIFIED BY THE
9 STATE, AND WHETHER THOSE INTERESTS REQUIRE THOSE RIGHTS
10 TO BE BURDENED, AND THAT IS THE THIRD CIRCUIT HOLDING IN
11 ROGERS .

12 THE THIRD IS THAT STATE INTERESTS ARE
13 LESS IMPORTANT IN PRESIDENTIAL ELECTIONS. THAT IS THE
14 ANDERSON CASE .

15 THE FOURTH IS THAT WE HAVE TO LOOK AT ALL
16 THE BURDENS IN COMBINATION, NOT IN ISOLATION, WHICH IS
17 THE CONSTITUTION PARTY CASE .

18 AND THE FIFTH AND PERHAPS THE MOST
19 IMPORTANT IS THAT WHEN A STATE PROVIDES A RIGHT TO A
20 RECOUNT AS PENNSYLVANIA DOES, AS THE SIXTH CIRCUIT HELD
21 IN STEIN V THOMAS ABOUT TEN HOURS AFTER OUR BRIEF WAS
22 FILED, IT IS CLEAR THAT THE STATE CANNOT USE ARBITRARY
23 OR UNREASONABLE PROCEDURAL RULES TO MAKE THAT RIGHT A
24 NULLITY. AND WITH THE COURT'S PERMISSION I WOULD LIKE
25 TO HAND THIS CASE UP TO THE COURT BECAUSE IT JUST CAME

1 DOWN.

2 THE COURT: SURE.

3 MR. MAAZEL: THE KEY LANGUAGE, YOUR
4 HONOR, I THINK IS THE BOTTOM OF PAGE 5 AND THE TOP OF
5 PAGE 6 WHERE THE SIXTH CIRCUIT HELD THAT ONCE THERE IS A
6 STATE RIGHT TO A RECOUNT, THE STATE CANNOT USE ARBITRARY
7 OR UNREASONABLE PROCEDURAL RULES TO MAKE THAT RIGHT A
8 NULLITY. AND I WOULD SUBMIT, YOUR HONOR, THAT THAT IS
9 EXACTLY WHAT HAS HAPPENED AND IS HAPPENING IN
10 PENNSYLVANIA.

11 THE COURT: AS I UNDERSTAND, AND AGAIN,
12 AS I SAID TO THE DOCTOR, CORRECT ME IF I'M WRONG, THERE
13 HAS BEEN A LOT OF INFORMATION TO ABSORB IN NOT VERY MUCH
14 TIME. AS I UNDERSTAND YOUR CONSTITUTIONAL TORT THEORY,
15 IS THE APPLICATION OF THE ELECTION CODE, IN PARTICULAR
16 THE COMMONWEALTH COURT'S DECISION TO REQUIRE A MILLION
17 DOLLAR BOND, WAS EFFECTIVELY A DECISION TO NOT TO ALLOW
18 YOU A RECOUNT IN VIOLATION OF, AND AGAIN, IF I'M WRONG
19 PLEASE TELL ME, EQUAL PROTECTION, SUBSTANTIVE DUE
20 PROCESS AND THE FIRST AMENDMENT.

21 MR. MAAZEL: I THINK THAT IS A SMALL
22 PIECE OF IT, YOUR HONOR, BUT THERE REALLY -- THERE ARE
23 SEVEN BURDENS ON THE RIGHT TO HAVE THE VOTE COUNT THAT I
24 WANT TO IDENTIFY AND THEY NEED TO BE LOOKED AT IN
25 COMBINATION.

1 THE FIRST IS THAT WE KNOW AND IT'S NOT
2 DISPUTED ON THIS RECORD THAT MANY OF THESE DRE MACHINES
3 DID NOT WORK. IN MONTGOMERY, IT'S SIMPLY IMPOSSIBLE
4 THAT 4,062 PEOPLE SHOWED UP AND DECIDED NOT TO VOTE.
5 AND WE HAVE AFFIDAVITS FROM MULTIPLE PEOPLE SAYING A "NO
6 VOTE" BUTTON CAME UP WHEN THEY TRIED TO VOTE FOR PEOPLE.
7 THAT IS NUMBER ONE.

8 NUMBER TWO, WE HAD THE EVIDENCE SUCH AS
9 IT IS THAT THESE MACHINES ARE VULNERABLE, THEY ARE
10 HACKABLE, THEY ARE EASY TO PENETRATE. AND THAT IS NOT
11 JUST THE OPINION OF DR. HALDERMAN.

12 IT'S THE OPINION OF HARRI HURSTI. HIS
13 DECLARATION'S IN THE RECORD, HE SAID THE MACHINES ARE
14 EASILY HACKED. IT'S ELEMENTARY TO HACK THEM. AND IN
15 PARAGRAPH 28, YOU DON'T EVEN NEED A BACHELOR'S DEGREE
16 LEVEL OF SKILL TO HACK THEM.

17 WE HAVE THE OPINION OF DUNCAN BUELL IN
18 HIS DECLARATION. HE'S THE LEADING EXPERT ON INVOTRONICS
19 WHICH IS USED IN 25 COUNTIES IN THE STATE, WHERE HE SAYS
20 THAT THAT STRUCTURE USES A NAIVE EVEN JUVENILE PASSWORD
21 STRUCTURE. THAT IS AT PARAGRAPH 13.

22 DANIEL LOPRESTI, CANDICE HOKE. I WON'T
23 GO THROUGH ALL THE DECLARATIONS. BUT THEY ALL SAY MORE
24 OR LESS THE SAME THING.

25 THE COURT: I HAVE READ THEM.

1 MR. MAAZEL: THEY ALL SAY THAT THESE
2 MACHINES REALLY ARE ANTIQUATED. THEY USE OLD
3 TECHNOLOGY. THEY ARE VERY VULNERABLE. SO THAT IS
4 REALLY THE SECOND, I WOULD SAY, OF THE SEVEN BURDENS
5 THAT I AM IDENTIFYING TODAY FOR YOUR HONOR.

6 THE THIRD IS THAT THERE IS NO PAPER TRAIL
7 AT ALL. THERE IS NO WAY FOR A VOTER TO VERIFY THAT HIS
8 OR HER VOTE COUNTED IN THE 50 COUNTIES THAT USE DRE
9 MACHINES. YOU GO TO A RITE AID AND YOU BUY TOOTHPASTE,
10 AND YOU GET A RECEIPT TO SHOW THAT YOU BOUGHT IT. HERE
11 WHEN YOU GO TO A DRE MACHINE TO CAST YOUR VOTE FOR
12 PRESIDENT OF THE UNITED STATES, YOU HAVE NOTHING. THERE
13 IS JUST NO WAY TO VERIFY THAT THE MACHINE WORKED.

14 THE FOURTH IS THE IMMENSE DIFFICULTY TO
15 GO THROUGH ANY PROCEDURE IN THE STATE OF PENNSYLVANIA TO
16 SEE IF YOUR VOTE COUNTED. I BREAK THAT DOWN INTO A FEW
17 DIFFERENT PIECES.

18 ONE IS THAT THERE IS NO WAY TO KNOW WHEN
19 YOU NEED TO REQUEST THE RECOUNT, THERE IS NO NOTICE OF
20 THE DEADLINES. AND I TOUCHED ON THIS BRIEFLY BEFORE,
21 BUT I MEAN NOTICE IS JUST A BETTER DUE PROCESS IDEA,
22 FROM MATTHEWS V ELDRIDGE, PRISON CASES, SCHOOL CASES.
23 IF THERE IS MAYBE ONE PROCEDURAL DUE PROCESS IDEA THAT
24 IS COMMON TO EVERY CASE, IT'S NOTICE. AND IN THIS CASE,
25 THERE IS NO NOTICE. EVERY COUNTY COUNTS AT DIFFERENT

1 RATES. EVERY COUNTY COUNTS DIFFERENTLY IN DIFFERENT
2 ELECTIONS. NOTHING IS PUBLISHED, AND THEN THE COUNTIES
3 DISAGREE AS TO WHEN THE DEADLINE IS. IS IT WHEN THE
4 VOTES ARE COUNTED OR IS IT FIVE DAYS AFTER?

5 SO IN LEHIGH THEY ACCEPT RECOUNT REQUESTS
6 FIVE DAYS AFTER COMPLETION OF THE VOTE. IN BUCKS IT HAS
7 TO BE THE COMPLETION OF THE VOTE. IN ALLEGHENY IT'S
8 FIVE DAYS AFTER. IN LANCASTER IT'S COMPLETION OF THE
9 VOTE. IT ALL DEPENDS ON THE WHIM OF THE COUNTY AND THE
10 MOMENT. THIS IS NOT A RATIONAL SYSTEM THAT CAN BE
11 DEFENDED. AND I THINK IT IS NOTABLE THAT NONE OF THE
12 DEFENDANTS DEFEND IT.

13 THERE IS NO PRECISE STATE INTEREST THAT
14 CAN JUSTIFY GIVING NO NOTICE WHATSOEVER TO VOTERS AS TO
15 WHEN THEY CAN SEEK A RECOUNT. AND IT'S THEIR BURDEN TO
16 IDENTIFY A PRECISE STATE INTEREST UNDER THE THIRD
17 CIRCUIT CASE LAW. THEY DON'T IDENTIFY ANY INTEREST AND
18 THERE CAN BE NONE, THERE CAN BE NO INTEREST IN HIDING
19 THE BALL FROM THE VOTER. SO THAT IS THE FOURTH BURDEN.

20 AND JUST BY WAY OF EXAMPLE, IN EXHIBIT 4,
21 WE HAVE THE DECLARATION OF MR. ALMQUIST, AND HE
22 DESCRIBES QUITE A SCENE WHEN HE TRIED TO GET HIS RECOUNT
23 PETITION FILED. HE FIRST WENT TO -- PARAGRAPH 4, I'M
24 SORRY, PARAGRAPH 5, HE WENT FIRST TO ELECTION SERVICES,
25 WHICH IS THE COUNTY BOARD. THEY TOLD HIM GO TO THE

1 COUNTY CLERK. HE WENT TO THE COUNTY CLERK. HE WAS TOLD
2 TO GO TO THE COUNTY SOLICITOR. HE WENT TO THE COUNTY
3 SOLICITOR. THEY SAID NO, YOU NEED TO GO TO THE COURT TO
4 THE PROTHONOTARY'S OFFICE. HE WENT TO THE
5 PROTHONOTARY'S OFFICE. THEY SAID NO, YOU NEED TO GO
6 BACK TO THE COUNTY BOARD.

7 THE COURT: WE'RE PROBABLY THE ONLY STATE
8 IN THE UNION THAT HAS THE OFFICE OF PROTHONOTARY, WHICH
9 IS WHY NO ONE KNOWS HOW TO PRONOUNCE IT.

10 MR. MAAZEL: I HAVE BEEN HERE FOR TWO
11 WEEKS, AND I STILL CAN'T PRONOUNCE IT. THANK YOU, YOUR
12 HONOR. PROTHONOTARY.

13 AND THEN WHEN HE WAS THERE, FINALLY THE
14 PROTHONOTARY -- I WON'T SAY THE WORD AGAIN.

15 THE COURT: MR. HARVEY WILL GIVE YOU
16 ELOCUTION LESSONS AFTER THE HEARING TODAY.

17 MR. MAAZEL: HE WAS TOLD TO FILL OUT A
18 COVER SHEET TO MAKE A PROPOSED ORDER TO PAY \$324 IN
19 FILING FEES, PAYABLE IN CASH OR CASHIER'S CHECK AND THAT
20 WAS AT 3:30 AND IT WAS DUE AT 4 O'CLOCK. SO IT'S JUST
21 -- IT'S AN IMPOSSIBLE SYSTEM FOR VOTERS TO ACTUALLY SEEK
22 RECOUNTS.

23 THE NEXT BURDEN THAT I BELIEVE IS
24 SIGNIFICANT IS NOT JUST THE LACK OF NOTICE, BUT THE
25 BURDEN ITSELF OF HAVING ANYTHING CLOSE TO A STATEWIDE

1 RECOUNT, WE NEED TO HAVE OVER 9,000 PETITIONS FILED BY
2 OVER 27,000 PEOPLE, EQUALLY DIVIDED THROUGHOUT THE STATE
3 IN A MATTER OF WEEKS. I MEAN IT'S AN ABSOLUTELY
4 INSURMOUNTABLE BURDEN. IT CAN'T BE DONE. IT HAS NEVER
5 BEEN DONE, AND NOT ONLY DO THEY NEED TO FILE, THEY NEED
6 TO GET THEIR NOTARY STAMP. THEY NEED TO PERHAPS TRAVEL
7 HUNDREDS OF MILES TO THE NEAREST OFFICE. THESE BURDENS
8 ARE FAR LESS SEVERE THAN FOR EXAMPLE THE CONSTITUTION
9 PARTY CASE IN THE THIRD RD CIRCUIT WHERE FEWER
10 SIGNATURES WERE NEEDED IN A FIVE-MONTH PERIOD, AND THEY
11 WERE NOT REQUIRED EVENLY DIVIDED THROUGHOUT THE STATE.
12 I MEAN, THE BURDEN IS IMPOSSIBLE AND I THINK ACTUALLY
13 IT'S VERY INTERESTING THAT THE PENNSYLVANIA SENATE
14 MAJORITY CAUCUS FILED THEIR AMICUS BRIEF. I DON'T KNOW
15 IF YOUR HONOR HAS HAD A CHANCE TO READ THAT YET.

16 THE COURT: I'VE READ ALL THE BRIEFS.

17 MR. MAAZEL: THEIR BRIEFS WERE VERY
18 INTERESTING BECAUSE THEY SAY WE MADE A CHOICE TO MAKE IT
19 IMPOSSIBLE. THEY DESCRIBED THE RECOUNT PROCESS AS
20 ONEROUS AND THEY SAY THAT IT'S A, QUOTE, INTENTIONAL
21 CHOICE AT PAGE 4. THEY WANT TO IT BE ALMOST IMPOSSIBLE.
22 IT'S ALMOST AS IF THE SENATE MAJORITY CAUCUS CAME TO
23 COURT AND SAID --

24 THE COURT: IF PENNSYLVANIA HAD NO
25 PROVISION AT ALL FOR A RECOUNT, COULD PENNSYLVANIA DO

1 THAT?

2 MR. MAAZEL: IT WOULD BE A DIFFERENT
3 CASE, YOUR HONOR.

4 THE COURT: OH, BELIEVE ME. I UNDERSTAND
5 THAT. BUT COULD PENNSYLVANIA SIMPLY SAY WE ARE NOT
6 GOING TO PROVIDE FOR A RECOUNT. WE WILL HAVE AN
7 ELECTION AND THAT IS IT. WOULD THAT VIOLATE SOME
8 PROVISION OF THE FEDERAL CONSTITUTION?

9 MR. MAAZEL: PROBABLY NOT. AND
10 PENNSYLVANIA COULD ALSO SAY, NO ONE IN PENNSYLVANIA HAS
11 A RIGHT TO VOTE FOR PRESIDENT. BUT ONCE PENNSYLVANIA
12 HAS --

13 THE COURT: I REALLY DON'T THINK THE TWO
14 ARE IN THE LEAST SIMILAR.

15 MR. MAAZEL: WELL, IN THE SENSE THAT
16 ONCE --

17 THE COURT: IN THE SENSE THAT THEY ARE
18 NOT IN THE LEAST SIMILAR, IT'S NOT A GOOD ANALOGY.

19 MR. MAAZEL: I GUESS MY POINT, AND MAYBE
20 I DID NOT MAKE IT WELL, IS THAT THE LEGISLATURE, AS THE
21 SIXTH CIRCUIT HAS SAID AND OTHER COURTS, ONCE THE
22 LEGISLATURE MAKES A DETERMINATION THAT VOTERS IN THAT
23 STATE HAVE A CERTAIN RIGHT, THEN THE CONSTITUTION KICKS
24 IN AND THAT RIGHT HAS TO BE EXERCISED IN A WAY THAT
25 COMPORTS WITH DUE PROCESS AND THE FIRST AMENDMENT AND

1 EQUAL PROTECTION.

2 IN THIS CASE, THERE IS A RIGHT, AT LEAST
3 IN THEORY ON PAPER, TO SEEK RECOUNTS, BUT IN PRACTICE
4 IT'S IMPOSSIBLE.

5 THE NEXT BURDEN I IDENTIFY ARE THE FEES.
6 AT \$50 --

7 THE COURT: THAT IS NOT IMPOSSIBLE IN
8 EVERY CASE. MR. HARVEY HAS DONE IT. NOT FOR A WHILE, I
9 GUESS. MR. HARVEY HAS DONE IT. HE MADE A BIT OF -- IN
10 THE VIEW OF SOME OFFICE HOLDERS -- A NUISANCE OF HIMSELF
11 DOING IT.

12 MR. MAAZEL: AND LOOK, IN THE STATEWIDE
13 RACE, JUST THE \$50 FEE PER PETITION IS ALREADY A HALF
14 MILLION DOLLARS. THE RECORD ESTABLISHES THAT COURTS ARE
15 REQUIRING THE FILING OF 9,158 LAWSUITS TO BRING THESE
16 COURT-ORDERED RECOUNTS. AND THEY ARE IMPOSING FILING
17 FEES OF 2 AND \$300. THOSE FEES ARE MORE LIKE
18 TWO-AND-A-HALF OR \$3 MILLION.

19 IN THE 3RD CIRCUIT CASE --

20 THE COURT: ARE YOU EQUATING, IF
21 PENNSYLVANIA LAW SAID THAT ONLY CAUCASIANS COULD SEEK A
22 RECOUNT, I COULD SEE HOW YOU WOULD SAY THAT WOULD
23 VIOLATE EQUAL PROTECTION. YOU ARE EQUATING THAT WITH
24 PENNSYLVANIA SAYING THE 67 COUNTIES ARE GOING TO
25 DETERMINE THEIR OWN RECOUNT PROCEDURES AND ENFORCE THEIR

1 OWN RECOUNT PROCEDURES RESULTING IN A PATCHWORK OF 67
2 DIFFERENT PROCEDURES -- SETS OF PROCEDURES. ARE YOU
3 -- THAT IS WHAT I'M HEARING YOU SAY. YOU ARE SAYING
4 THAT DISCRIMINATION ON THE BASIS OF RACE OF A RIGHT ONCE
5 STATUTORILY AFFORDED IS THE SAME AS DISCRIMINATION ON
6 THE BASIS OF COUNTY OF RESIDENCE?

7 MR. MAAZEL: WELL, IT'S ONLY THE SAME IN
8 THE SENSE THAT THEY BOTH INVOLVE EQUAL PROTECTION
9 CLAUSE. BUT IT'S NOT JUST BASED ON THE COUNTY OF
10 RESIDENCE. IT'S THE OVERALL BURDEN PLACED ON VOTERS TO
11 BE ABLE TO EXERCISE --

12 THE COURT: HAVE YOU EVER DRIVEN THROUGH
13 A SPEED TRAP WHERE YOU GO THROUGH ONE TOWNSHIP AND THE
14 SPEED LIMIT IS 20 MILES AN HOUR, YOU GO THROUGH ANOTHER
15 TOWNSHIP AND IT'S 25 MILES AN HOUR, THEN YOU GO BACK TO
16 ANOTHER TOWNSHIP AND IT'S 20 MILES AN HOUR AGAIN, AND
17 IT'S THAT SECOND -- THIRD TOWNSHIP THAT ALL THE TICKETS
18 ARE HANDED OUT? IS THAT SOMEHOW IRRATIONAL BECAUSE EACH
19 COUNTY DECIDES THIS IS HOW FAST WE WANT PEOPLE TO DRIVE
20 IN OUR TOWNSHIP?

21 MR. MAAZEL: IT'S NOT QUITE MY ARGUMENT,
22 YOUR HONOR. MY ARGUMENT IS THAT WHEN YOU ADD UP ALL THE
23 BURDENS ON VOTERS IN PENNSYLVANIA, THOSE VOTERS -- THOSE
24 BURDENS COLLECTIVELY SO BURDEN THE RIGHT TO MAKE SURE
25 THAT YOUR VOTE COUNTED THAT IT VIOLATES THESE THREE

1 CLAUSES OF THE CONSTITUTION.

2 AND I WOULD JUST LOOK AT THE THIRD
3 CIRCUIT CASE IN BELITSKUS WHERE CANDIDATES WERE CHARGED
4 A FILING FEE OF BETWEEN 5 AND \$100, AND THE THIRD
5 CIRCUIT SAID, AND I QUOTE, THAT CLEARLY VIOLATES THE
6 EQUAL PROTECTION CLAUSE. A FILING FEE OF 5 TO \$100. I
7 MEAN THAT IS A WALK IN THE PARK COMPARED TO OUR CASE.
8 THE HOOPS THAT VOTERS HAVE TO GO THROUGH TO JUST ATTEMPT
9 TO SEE IF THEIR VOTE COUNTED ARE FAR GREATER. I MEAN,
10 IT'S IN A WHOLLY DIFFERENT CATEGORY FROM EVEN THE
11 BELITSKUS CASE WHERE THE THIRD CIRCUIT SAID IT WAS A
12 CLEAR VIOLATION AND THAT THAT 5 TO \$100 FEE WAS A,
13 QUOTE, SEVERE BURDEN.

14 SO JUST THE LAST WORD I WANT TO ADDRESS
15 AND I DO WANT TO RESERVE A LITTLE BIT OF TIME.

16 THE COURT: YOU WANTED TO RESERVE
17 15 MINUTES. THAT IS WHAT YOU'VE GOT LEFT.

18 MR. MAAZEL: I WILL TRY TO WRAP UP HERE,
19 YOUR HONOR.

20 THE COURT: IT'S YOUR 15 MINUTES.

21 MR. MAAZEL: THE LAST BURDEN REALLY IS
22 UNIQUE TO DRE'S AND THAT IS THAT BECAUSE THERE ARE NO
23 PAPER BALLOTS THERE IS NO WAY TO EXAMINE THEM. AND THE
24 ONLY WAY TO EXAMINE IF THE MACHINES ARE COMPROMISED IS
25 THROUGH A FORENSIC EXAMINATION. THE STATE SAYS AT PAGE

1 8 OF THEIR BRIEF THAT NO ONE DOES THAT FORENSIC
2 EXAMINATION, NEITHER THE COUNTY BOARDS AND NOT VOTERS
3 AND NOT CANDIDATES, THAT NO ONE HAS THAT RIGHT. AND
4 THAT REALLY IS THE WAY TO MAKE SURE THAT YOUR VOTE
5 COUNTED IN A DRE DISTRICT WHERE THERE IS NO PAPER
6 BALLOT.

7 I JUST WANT TO SAY ONE BRIEF THING ABOUT
8 REMEDY AND THEN I WILL STOP FOR NOW. AND THAT IS THAT
9 THE REMEDY WE ARE SEEKING IS REALLY NOT ON THE
10 PRELIMINARY INJUNCTION MOTION WHAT THE DEFENDANTS
11 DESCRIBE. WE ARE SIMPLY SEEKING TWO THINGS. ONE IS A
12 FORENSIC EVALUATION OF THE DRE CENTRAL COMPUTER SYSTEM
13 IN SIX COUNTIES, AND WE NAMED THEM IN DR. HALDERMAN'S
14 DECLARATION, ONE COUNTY PER EACH OF THE SIX DRE SYSTEMS
15 USED IN THE STATE. THAT'S AN EXAMINATION THAT CAN TAKE
16 PLACE IN ONE TO TWO DAYS. IT'S JUST COPYING A HARD
17 DRIVE. IT IS DONE IN CIVIL DISCOVERY ALL THE TIME.
18 IT'S FORENSIC IMAGING. IT CAN BE DONE AT THE EXPENSE OF
19 THE STEIN CAMPAIGN. IT CAN BE DONE UNDER THE
20 SUPERVISION OF A COUNTY BOARD. IT CAN BE WRAPPED UP BY
21 MONDAY. THERE IS NO REASON WHY THIS CAN'T BE DONE BY
22 MONDAY. SO THERE IS REALLY NO TIMING ISSUE. AND THEN
23 AS TO -- IT WOULD NOT AFFECT A SINGLE VOTE, BY THE WAY,
24 IN THE SENSE THAT IT WOULD NOT TOUCH A DRE MACHINE.

25 AND THE OTHER RELIEF, WE'VE ASKED FOR A

1 MANUAL RECOUNT IN OPTICAL SCAN COUNTIES. AND REALLY
2 WHAT WE WOULD REQUEST, I THINK GIVEN THE EXIGENCIES OF
3 TIME, IS SIMPLY A RECOUNT OF ONE PRECINCT IN EACH OF THE
4 19 OPTICAL SCAN COUNTIES THAT HAVE NOT HAD A RECOUNT.
5 AND THAT CAN BE DONE -- I MEAN, ONE PRECINCT, YOU CAN DO
6 THAT COUNT IN TWO HOURS. IF THAT WERE DONE EVEN
7 TOMORROW, EACH COUNTY SPENDING TWO HOURS DOING THAT SORT
8 OF A COUNT, WE WOULD HAVE A CROSS CHECK AGAINST THE
9 MACHINES. SO WE WOULD HAVE A MUCH BETTER SENSE, DID THE
10 OPTICAL SCAN MACHINES WORK OR NOT?

11 SO WITH THAT I WILL STOP FOR NOW, AND I
12 THANK YOUR HONOR FOR THE TIME AND LOOK FORWARD TO THE
13 END OF THE PRESENTATION.

14 THE COURT: MS. UNGER, MR. JOEL.

15 MR. JOEL: YES, YOUR HONOR. I THINK WHAT
16 I WOULD LIKE TO DO, IF POSSIBLE, IS RESERVE FIVE MINUTES
17 OF MY 45 AT THE END FOR SORT OF A CLOSING AND AN
18 ARGUMENT AND GET RIGHT INTO OUR WITNESSES, IF THAT'S
19 OKAY.

20 THE COURT: OKAY.

21 MR. JOEL: WE WOULD CALL DR. SHAMOS.

22 THE COURT: MR. MAAZEL, I WANT TO BE
23 CLEAR, IF DR. HALDERMAN STAYS IN THE COURTROOM DURING
24 THIS TESTIMONY, I'M NOT GOING TO LET YOU CALL HIM AGAIN.

25 MR. MAAZEL: THAT WAS NOT MY INTENTION,

1 YOUR HONOR.

2 THE COURT: OKAY.

3 PLEASE SWEAR THE WITNESS.

4 MICHAEL SHAMOS, DEFENSE WITNESS, SWORN.

5 THE CLERK: STATE AND SPELL YOUR FULL
6 NAME FOR THE RECORD.

7 THE WITNESS: MICHAEL. I-M-I-A-N.
8 S-H-A-M-O-S.

9 DIRECT EXAMINATION

10 BY MR. JOEL:

11 Q. GOOD AFTERNOON, DR. SHAMOS. WHAT IS YOUR
12 CURRENT POSITION?

13 A. MY CURRENT POSITION IS -- I HAVE THE TITLE OF
14 DISTINGUISHED CAREER PROFESSOR IN THE SCHOOL OF COMPUTER
15 SCIENCE AT CARNEGIE MELLON UNIVERSITY IN PITTSBURGH.

16 Q. HOW LONG HAVE YOU DONE THAT?

17 A. WELL, I HAVE BEEN AFFILIATED WITH CARNEGIE
18 MELLON SINCE 1975.

19 Q. JUST BRIEFLY TELL US WHAT YOUR EDUCATION IS.

20 A. WELL, I STARTED OUT IN PHYSICS AT PRINCETON, GOT
21 AN UNDERGRADUATE DEGREE IN PHYSICS. THEN WENT TO VASSAR
22 COLLEGE WHILE I WAS WORKING FOR IBM, NEAR POUGHKEEPSIE,
23 NEW YORK. GOT A MASTER'S IN PHYSICS. THEN DURING
24 VIETNAM I SERVED AS AN OFFICER IN THE UNITED STATES
25 PUBLIC HEALTH SERVICE AT THE NATIONAL INSTITUTES OF

1 HEALTH IN BETHESDA, MARYLAND AND GOT A DEGREE IN
2 TECHNOLOGY OF MANAGEMENT FROM AMERICAN UNIVERSITY.

3 THEN I WENT TO YALE UNIVERSITY, WHICH HAD
4 JUST STARTED A COMPUTER SCIENCE DEPARTMENT. I WAS THERE
5 BETWEEN 1972 AND 1975. I GOT THREE DEGREES DURING THAT
6 TIME. AND ULTIMATELY GOT A PH.D. FROM YALE AND WAS
7 HIRED BY CARNEGIE MELLON UNIVERSITY IN THEIR COMPUTER
8 SCIENCE DEPARTMENT. WHILE I WAS TEACHING THERE, I GOT A
9 J.D. LAW DEGREE FROM DUQUESNE UNIVERSITY IN PITTSBURGH.

10 MR. JOEL: MAY I APPROACH, YOUR HONOR?

11 THE COURT: BEG YOUR PARDON?

12 MR. JOEL: MAY I APPROACH THE WITNESS?

13 THE COURT: SURE.

14 BY MR. JOEL:

15 Q. DR. SHAMOS, IN THE INTEREST OF TIME, TO TRY TO
16 EXPEDITE SOME OF THIS, IS YOUR CV IN THAT PACKET THAT I
17 JUST GAVE YOU, WHICH HAS BEEN MARKED AS D 5?

18 THE COURT: I HAVE NOT SEEN THIS BEFORE,
19 BUT I HAVE TAKEN A QUICK LOOK AT IT AND I HAVE HEARD DR.
20 SHAMOS'S TESTIMONY. IS THERE ANY OBJECTION TO MY
21 QUALIFYING -- JUST TO SAVE TIME, TO MY QUALIFYING THE
22 DOCTOR AS AN EXPERT IN WHAT FIELD, DOCTOR?

23 THE WITNESS: THE FIELD IS ELECTRONIC
24 VOTING AND PARTICULARLY THE ELECTRONIC VOTING PROVISIONS
25 OF THE PENNSYLVANIA ELECTION CODE.

1 THE COURT: ANY OBJECTION?

2 MR. TABAS: NO OBJECTION, YOUR HONOR.

3 MS. FRICK: WE WOULD OBJECT IF HE IS
4 TRYING TO BE QUALIFIED IN THE FIELDS OF CYBER SECURITY
5 OR COMPUTER SECURITY BUT....

6 THE COURT: I'M SORRY. YOUR NAME IS --

7 MS. FRICK: I'M SORRY. MY NAME IS ALISON
8 FRICK FOR PLAINTIFFS.

9 THE COURT: MS. FRICK.

10 DOCTOR, WOULD YOU AGAIN SAY WHAT IT IS,
11 YOU ARE QUALIFIED AS AN EXPERT IN ELECTRONIC VOTING AND
12 IN THE PENNSYLVANIA ELECTION CODE?

13 THE WITNESS: IN THE ELECTRONIC VOTING
14 PROVISIONS OF THE PENNSYLVANIA ELECTION CODE.

15 THE COURT: THAT IS ALL HE IS BEING
16 QUALIFIED IN. IS THERE ANY OBJECTION?

17 MS. FRICK? THERE IS NO OBJECTION.

18 THE COURT: VERY WELL. HE WILL BE SO
19 QUALIFIED. PLEASE CONTINUE.

20 MR. JOEL: THANK YOU, YOUR HONOR.

21 BY MR. JOEL:

22 Q. JUST TO HIGHLIGHT ONE ASPECT, DR. SHAMOS, WERE
23 YOU A STATUTORILY ASSIGNED EXAMINER FOR THE COMMONWEALTH
24 OF PENNSYLVANIA AS IT RELATES TO OUR VOTING MACHINES?

25 A. YES. BEGINNING IN 1980 WITH THE PASSAGE OF THE

1 ELECTRONIC VOTING SECTION OF THE ELECTION CODE, THE
2 SECRETARY OF THE COMMONWEALTH WAS REQUIRED TO NAME THREE
3 EXAMINERS PURSUANT TO STATUTE TO EXAMINE VOTING SYSTEMS
4 SUBMITTED FOR CERTIFICATION IN PENNSYLVANIA. I WAS ONE
5 OF THOSE EXAMINERS FOR -- CONTINUOUSLY FOR THE FIRST
6 20 YEARS, FROM 1980 TO 2000. AND THEN LATER ON I DID IT
7 AGAIN FOR FIVE YEARS.

8 Q. AND IN CONNECTION WITH YOUR WORK, HAVE YOU HAD
9 THE OPPORTUNITY TO STUDY AND EXAMINE THE VARIOUS DRE'S
10 THAT ARE IN USE WITHIN THE COMMONWEALTH?

11 A. YES. I HAVE EXAMINED ALL OF THE DIFFERENT
12 ELECTRONIC VOTING SYSTEMS THAT ARE USED IN PENNSYLVANIA,
13 INCLUDING BOTH DRE'S AND OPTICAL SCANNERS.

14 Q. WERE YOU INVOLVED -- ARE YOU FAMILIAR WITH THE
15 CASE, THE BANFIELD CASE.

16 A. VERY.

17 Q. WERE YOU INVOLVED IN THAT AS AN EXPERT?

18 A. YES, I WAS.

19 Q. JUST BRIEFLY WHAT WAS THE RESULT OF THAT AND
20 WHAT WAS YOUR ROLE?

21 A. WELL, THE ALLEGATION WAS MADE THAT THE VOTING
22 SYSTEMS USED IN PENNSYLVANIA ARE SO INSECURE THAT THEY
23 DEPRIVE PENNSYLVANIA VOTERS OF THEIR CONSTITUTIONAL
24 RIGHT TO HAVE THEIR VOTES BE COUNTED. AND I WAS AN
25 EXPERT FOR THE COMMONWEALTH, AND WE SUCCESSFULLY

1 RESISTED THAT ACCUSATION.

2 Q. AND DID THAT CASE GO ON FOR SOME TIME?

3 A. IT WENT ON FOR A VERY LONG TIME, ULTIMATELY MADE
4 IT TO THE SUPREME COURT OF PENNSYLVANIA.

5 Q. IN ADDITION TO THE BANFIELD CASE, AM I CORRECT
6 THAT YOU TESTIFIED AS AN EXPERT SEVERAL TIMES WITH
7 REGARDS TO ELECTRONIC VOTING MACHINES?

8 A. MULTIPLE TIMES, THAT'S CORRECT. IN TWO KINDS OF
9 CASES, SOME PATENT CASES, AND OTHERS SIMILAR TO THIS ONE
10 IN WHICH THE CHALLENGE WAS BEING RAISED AGAINST THE USE
11 OF ELECTRONIC VOTING.

12 Q. LET'S GET RIGHT TO THAT THEN. HAVE YOU HAD AN
13 OPPORTUNITY TO REVIEW THE EXPERT DECLARATIONS AND
14 AFFIDAVITS PROVIDED BY THE PLAINTIFFS IN THIS CASE?

15 A. YES, I REVIEWED ALL OF THEM.

16 Q. AND HOW ABOUT THE COMPLAINT THAT THEY FILED AND
17 THE FACTUAL ALLEGATIONS AND THAT SORT OF STUFF?

18 A. I'VE REVIEWED ALL OF THE FILINGS IN THIS CASE
19 EXCEPT THE MOTIONS FOR PRO HAC ADMISSION.

20 Q. VERY GOOD.

21 THE COURT: YOU REALLY DENIED YOURSELF A
22 REAL TREAT.

23 MR. JOEL: THERE WERE A LOT OF THOSE.

24 BY MR. JOEL:

25 Q. ARE YOU AWARE -- BASED ON THAT REVIEW OF THE

1 SCENARIOS THAT PLAINTIFFS ARE POSITING AS IT RELATES TO
2 WHY THEY BELIEVE THAT MALWARE CAN BE PUT ON A MACHINE
3 AND THAT SORT OF STUFF?

4 A. YES, I'M FAMILIAR WITH THEM. I DON'T KNOW WHAT
5 WAS TESTIFIED TO TODAY BUT....

6 Q. I UNDERSTAND THAT. SO LET ME TICK THROUGH --
7 YOU ARE AWARE WHAT THEY PUT FORWARD IN THEIR AFFIDAVITS
8 BECAUSE YOU READ THOSE?

9 A. YES.

10 Q. SO IS IT YOUR UNDERSTANDING THAT ONE OF THOSE
11 SCENARIOS IS THAT MALWARE COULD BE PUT ON THE VOTING
12 MACHINES AND THEN I GUESS REMAIN AFTER THE FACT?

13 A. YES, THAT IS ONE OF THE SCENARIOS.

14 Q. DO YOU HAVE AN OPINION AS TO WHETHER OR NOT
15 THAT, GIVEN YOUR KNOWLEDGE OF THE ELECTRONIC VOTING
16 MACHINES, THE DRE'S IN THE COMMONWEALTH, DO YOU HAVE AN
17 OPINION AS TO WHETHER OR NOT THAT IS LIKELY OR EVEN
18 POSSIBLE?

19 MS. FRICK: OBJECTION, YOUR HONOR. HE
20 HAS NOT BEEN --

21 THE COURT: OVERRULED.

22 THE WITNESS: YES, I DO.

23 BY MR. JOEL:

24 Q. DO YOU HOLD THAT OPINION TO A REASONABLE DEGREE
25 OF CERTAINTY IN YOUR FIELD?

1 A. YES.

2 Q. WHAT IS THAT OPINION?

3 A. OKAY. SO LET'S BE VERY SPECIFIC ABOUT THIS.

4 IF YOU GET A MACHINE OF ANY KIND INTO A
5 LABORATORY AND YOU ARE ALLOWED UNFETTERED ACCESS TO IT,
6 YOU CAN PLAY AROUND WITH IT AND HACK IT, YOU CAN BREAK
7 INTO ANYTHING. THE QUESTION IS WHETHER THE SAME KINDS
8 OF MANIPULATIONS WOULD BE POSSIBLE OR PRACTICAL IN A
9 REAL ELECTION GIVEN THE WAY THE VOTING MACHINES ARE
10 STORED, PREPARED FOR USE, TESTED, AND TABULATIONS DONE
11 AND I DON'T THINK IT'S POSSIBLE.

12 Q. PLEASE EXPLAIN WHY NOT.

13 A. OKAY. SO IF THERE IS MALWARE THAT IS PRESENT ON
14 A MACHINE BEFORE THE ELECTION, THEN WHEN WE TRY TO TEST
15 THE MACHINE TO DETERMINE WHETHER OR NOT IT'S GOING TO
16 COUNT VOTES CORRECTLY, IT SHOULD FAIL. AFTER THE
17 ELECTION, IT SHOULD ALSO FAIL. IF IT IS THE TYPE OF
18 MALWARE THAT IS SENSITIVE TO TIME, THAT IS IT LOOKS AT
19 THE CLOCK THAT IS ON THE VOTING MACHINE AND SO THAT IT
20 ONLY BEHAVES IMPROPERLY DURING THE ELECTION, THEN THAT
21 KIND OF BEHAVIOR CAN BE TESTED THROUGH A PROCESS CALLED
22 PARALLEL TESTING AND RULED OUT.

23 FURTHERMORE, IF THE MALWARE REMAINS ON
24 THE MACHINE AFTER THE ELECTION, THEN IT'S SIMPLICITY
25 ITSELF TO DETERMINE IF THE MALWARE IS STILL THERE BY

1 COMPARING WHAT'S REFERRED TO AS THE HASH FUNCTION OF THE
2 SOFTWARE WITH RECORDED AND STORED HASH FUNCTIONS IN
3 GOVERNMENTAL LIBRARIES.

4 Q. AND AS IT RELATES TO THE ABILITY TO PUT THIS
5 MALWARE ON THE CENTRALIZED COMPUTER WHERE THE ELECTION
6 SYSTEM INFORMATION IS STORED?

7 A. YES. BUT LET ME FINISH THE PREVIOUS ANSWER.

8 Q. SURE. I'M SORRY. GO AHEAD.

9 A. BECAUSE WE WERE TALKING ABOUT THE POSSIBILITY OF
10 INFECTING ONE MACHINE. IT TAKES TIME TO DO THAT. IT
11 TAKES ACCESS TO THE MACHINE. ONE HAS TO BREAK SEALS, DO
12 THINGS TO THE MACHINE AND THEN APPLY COUNTERFEIT SEALS
13 BACK TO THE MACHINE IN SUCH A WAY THAT NOBODY NOTICES
14 WHAT IS GOING ON. AND TO DO THIS TO ANY SIGNIFICANT
15 NUMBER OF MACHINES REQUIRES AN INCREDIBLY LONG TIME. I
16 DID A CALCULATION EARLIER THIS YEAR AND FOUND THAT IT
17 WOULD TAKE FOUR MONTHS TO DO IT FOR THE DRE MACHINES
18 THAT ARE USED IN MY COUNTY, ALLEGHENY COUNTY. NOBODY
19 HAS UNFETTERED ACCESS TO THE MACHINE WAREHOUSE FOR FOUR
20 MONTHS WITHOUT BEING OBSERVED.

21 NOW, THE NEXT QUESTION ABOUT THE
22 CENTRAL -- ABOUT THE CENTRAL COMPUTERS. SO BY CENTRAL
23 COMPUTER WE MEAN A MACHINE THAT IS OPERATED BY A COUNTY
24 AND IS USED PRIMARILY FOR THE PURP -- ACTUALLY FOR
25 SEVERAL PURPOSES. ONE IS TO MAINTAIN A DATABASE OF THE

1 VARIOUS BALLOT STYLES THAT ARE GOING TO BE USED AT THE
2 POLLING PLACES IN THAT PRECINCT. ANOTHER THING THAT IT
3 DOES IS, IT MAINTAINS TYPICALLY TABULATION SOFTWARE SO
4 THAT THE RESULTS OF THE ELECTION CAN BE TABULATED IN A
5 CENTRALIZED PLACE SO OVERALL TOTALS CAN BE OBTAINED.

6 THOSE MACHINES, THEY ARE OPERATED UNDER
7 DIFFERENT PROTOCOLS AND PROCESSES IN THE DIFFERENT
8 COUNTIES IN THE STATE. BUT TYPICALLY THE CENTRAL
9 ELECTION MACHINE IS DEDICATED SOLELY TO THAT PURPOSE AND
10 IS ONLY TURNED ON A FEW TIMES A YEAR. IT'S NEVER
11 CONNECTED TO THE INTERNET. AND IT'S NEVER USED FOR ANY
12 OTHER PURPOSE, UNDERSTANDING THAT THE SOFTWARE THAT RUNS
13 ON THE VOTING MACHINES THEMSELVES DOES NOT COME FROM
14 THAT COMPUTER. AND FURTHERMORE, THE TABULATIONS OF
15 THOSE COMPUTERS DO UNOFFICIAL ONLY, AND THEY ARE USED
16 FOR REPORTING TO THE PRESS ON ELECTION NIGHT. THEY ARE
17 NOT USED TO DETERMINE WHO THE WINNER OF AN ELECTION IS.

18 Q. AND WHAT IS A PEB?

19 A. PEB IS AN ABBREVIATION FOR PORTABLE ELECTRONIC
20 BALLOT. IT'S A CARTRIDGE ABOUT THE SIZE OF A PACK OF
21 CIGARETTES THAT IS USED WITH THE IVOTRONIC VOTING
22 MACHINES. WHEN A VOTER PRESENTS THEMSELVES AT THE
23 POLLING PLACE AND ASKS TO VOTE, IF -- AFTER THEY SIGN
24 IN, THEY ARE ESCORTED TO ONE OF THE MACHINES BY A POLL
25 WORKER. THE POLL WORKER HAS ONE OF THESE PEB'S THAT HAS

1 THE APPROPRIATE BALLOT STYLE FOR THAT PARTICULAR
2 ELECTION THAT THE VOTER IS QUALIFIED TO VOTE IN. FOR
3 PRESIDENTIAL ELECTION, EVERYONE GETS THE SAME ONE. BUT
4 FOR PRIMARIES, FOR EXAMPLE, YOU CAN ONLY VOTE IN THE
5 PRIMARY FOR WHICH YOU ARE A REGISTERED VOTER. SO A
6 DEMOCRAT WOULD GET A DIFFERENT PEB THAN THE REPUBLICAN
7 WOULD. THE VOTER DOES NOT TOUCH THESE. THEY ARE
8 INSERTED IN THE MACHINE. THEY CONTAIN -- IN THAT USAGE
9 THEY ONLY CONTAIN DATA, TELLING THE NAMES OF THE
10 CANDIDATES, THE PARTIES THEY ARE AFFILIATED WITH AND
11 FUNDAMENTALLY GRAPHIC INFORMATION ABOUT HOW THE BALLOT
12 IS TO APPEAR ON THE SCREEN.

13 Q. THERE IS NO SOFTWARE ON THOSE?

14 A. WELL, THEY HAVE SOFTWARE ON THEM BECAUSE THEY
15 HAVE TO INTERACT WITH THE MACHINE BUT THEY DON'T HAVE
16 SOFTWARE THAT IS THEN UPLOADED TO THE MACHINE.

17 THE COURT: WHEN I GO TO VOTE IN
18 PHILADELPHIA, FOR INSTANCE, I HAVE NOTICED IN -- WHEN I
19 WAIT ON LINE IN THE PRIMARY, THE PEOPLE AT THE POLL WILL
20 CALL OUT A POLITICAL PARTY OF THE VOTER PRESUMABLY, AND
21 SOMEBODY WILL PULL ALMOST WHAT LOOKS LIKE AN INK
22 CARTRIDGE OUT OF THE MACHINE AND INSERT ANOTHER ONE.
23 THEN WHEN THE PARTY CHANGES, THEY WILL PULL OUT THE INK
24 CARTRIDGE AND INSERT THE FIRST ONE. IS THAT WHAT YOU
25 ARE TALKING ABOUT?

1 THE WITNESS: THAT'S RIGHT. IT'S
2 DIFFERENT IN PHILADELPHIA THAN IT IS IN PITTSBURGH.

3 THE COURT: ALWAYS.

4 THE WITNESS: THE CONCEPT IS THE SAME.

5 BY MR. JOEL:

6 Q. AND WHEN WE -- WHEN WE ARE TALKING ABOUT THE
7 CENTRALIZED COMPUTER AND THE PEB'S, WHEN WE ARE ON --
8 WHEN THE MACHINES ARE OPENED, IS THERE THE ABILITY TO
9 HAVE THAT MACHINE ACCEPT NEW SOFTWARE?

10 A. WELL, YOU MEAN OPEN FOR VOTING?

11 Q. YES.

12 A. THE POLLS BEING OPEN, NO.

13 SO THE CENTRAL COMPUTER IS WHERE I SAID
14 EARLIER IS THE DATABASE OF ALL OF THE CANDIDATES AND
15 OFFICES AND QUESTIONS, WHATEVER IS GOING TO BE ON THE
16 BALLOTS IN ANY OF THE POLLING PLACES IN THAT COUNTY,
17 THEY ARE GOING TO BE IN A DATABASE ON THE CENTRAL
18 MACHINE. THE CENTRAL MACHINE IS THEN USED TO MAKE -- TO
19 PUT THAT DATA ONTO PEB'S WHICH ARE THEN DISTRIBUTED TO
20 THE POLLING PLACES SO THEY HAVE THE APPROPRIATE BALLOT
21 STYLES. THAT IS ONE USE OF THE PEB'S.

22 ANOTHER USE OF THE PEB'S IS ALSO TO
23 DISTRIBUTE NEW VERSIONS OF SOFTWARE. WHEN THERE IS A
24 MAINTENANCE RELEASE, FOR EXAMPLE, THAT HAS BEEN APPROVED
25 BY THE SECRETARY OF THE COMMONWEALTH, THE WAY THAT IS

1 INSTALLED IN THE DIFFERENT VOTING MACHINES IS TO OPEN
2 THEM UP IN A DIFFERENT MODE THAN IS USED DURING THE
3 ELECTION, THEY ARE OPENED IN MAINTENANCE MODE. THEN THE
4 PEB IS INSERTED AND IT OVERWRITES THE SOFTWARE THAT IS
5 ON THE MACHINE. THIS CANNOT BE DONE DURING AN ELECTION
6 BECAUSE WHEN THE POLLS HAVE BEEN OPENED, IT WILL NOT GO
7 INTO THE MODE THAT ALLOWS NEW SOFTWARE TO BE UPLOADED.
8 ONE WOULD HAVE TO CLOSE THE POLLS. AND WHEN YOU CLOSE
9 THE POLLS, OF COURSE A TOTALS TAPE IS PRODUCED. I'M
10 IMAGINING A SCENARIO IN WHICH A VOTER WALKS INTO A
11 POLLING PLACE WITH ONE OF THESE -- A FORGED PEB IN HIS
12 POCKET WITH THE INTENTION OF CHANGING THE SOFTWARE ON
13 THE VOTING MACHINE. IN ORDER TO MAKE THAT WORK, HE
14 WOULD TO HAVE CLOSE THE POLLS AND CAUSE THAT TOTALS TAPE
15 TO BE PRODUCED. THEN HE WOULD HAVE TO OPEN THE POLLS.
16 AND WHEN HE OPENS THE POLLS, THERE IS ANOTHER TAPE THAT
17 IS PRODUCED CALLED A ZERO TAPE TO PROVE THAT THERE ARE
18 NO VOTES ON THE MACHINE. THAT TAPE HAS TO BE SIGNED BY
19 THE JUDGES OF ELECTION. SO THERE IS NO CONCEIVABLE WAY
20 THAT A VOTER HIMSELF COULD DO ANYTHING LIKE THIS BECAUSE
21 HE IS NOT THE JUDGE OF ELECTION. WE ARE GOING TO NOTICE
22 IF IN THE MIDDLE OF AN ELECTION, THE VOTING MACHINE
23 STARTS PRINTING ITS TOTALS TAPE.

24 Q. MOVING ON TO ANOTHER SCENARIO, THIS SUPER
25 SOPHISTICATED MALWARE THAT WILL DISAPPEAR AT THE END.

1 DO YOU HAVE AN OPINION AS TO WHETHER THE DRE'S AND THE
2 OTHER VOTING MACHINES IN THE COMMONWEALTH ARE -- WHETHER
3 THAT IS A LIKELY SCENARIO OR A POSSIBLE SCENARIO TO HAVE
4 HAPPEN --

5 A. YES.

6 Q. -- TO ALTER AN ELECTION?

7 A. I DO.

8 MS. FRICK: OBJECTION, YOUR HONOR. THIS
9 GOES BEYOND THE SCOPE OF HIS EXPERTISE.

10 THE COURT: OVERRULED.

11 BY MR. JOEL:

12 Q. DO YOU HAVE THAT OPINION WITHIN A REASONABLE
13 DEGREE OF CERTAINTY IN YOUR FIELD?

14 A. YES.

15 Q. WHAT'S YOUR OPINION?

16 A. THIS SCENARIO WAS DREAMED UP SOMEWHERE AROUND
17 TEN YEARS AGO. IT CAME UP FIRST IN -- AT THE OFFICE OF
18 THE SECRETARY OF STATE OF CALIFORNIA. AND I HAD A
19 CONFERENCE CALL WITH THE EXAMINERS FOR CALIFORNIA OVER
20 THIS VERY SCENARIO. AND THEY ASKED ME WHETHER THERE WAS
21 ANY WAY OF PREVENTING IT OR AT LEAST DETECTING IT IF IT
22 OCCURRED. AND THAT IS WHERE I BASICALLY DEvised THE
23 METHOD NOW CALLED PARALLEL TESTING, IN WHICH A NUMBER OF
24 MACHINES WOULD BE SEQUESTERED DURING THE ELECTION. THEY
25 WOULD BE OPENED AS NORMAL AS IF THEY WERE GOING TO BE

1 VOTED ON BY REAL VOTERS. BUT INSTEAD OF BEING VOTED ON
2 BY REAL VOTERS, THEY WOULD BE VOTED ON BY COUNTY
3 EMPLOYEES FOLLOWING A PARTICULAR SCRIPT OF EXACTLY WHOM
4 SHOULD BE VOTED FOR. AND THE IDEA IS WE WOULD KNOW IN
5 ADVANCE WHAT THE TOTALS WOULD BE IF THOSE BALLOTS WERE
6 CAST THAT WAY. AND THEN DURING THE ELECTION, ALL DAY
7 LONG, UNTIL THE POLLS CLOSE, THE COUNTY EMPLOYEES VOTE
8 ON THESE MACHINES. AND AT THE END, WHAT WE'LL DO IS WE
9 WILL PRINT THE TOTALS TAPE. NOW LET'S SUPPOSE THERE WAS
10 MALWARE IN THERE THAT ERASED ITSELF AT THE CLOSE OF
11 POLLS SO WE CAN'T DO A FORENSIC EXAMINATION AND
12 DETERMINE WHETHER OR NOT THAT PARTICULAR SOFTWARE IS IN
13 THERE. UNLESS -- IF THE MALWARE WERE GOING TO BE
14 SWAPPING VOTES, THEN WE WOULD GET THE WRONG TOTALS.

15 I HAVE ALSO CHALLENGED MY COLLEAGUES WHO
16 HAVE COME UP WITH THIS SCENARIO, TO WRITE DOWN, SHOW ME
17 A SOFTWARE ARCHITECTURE THAT WOULD ACTUALLY PERMIT THIS
18 TO BE DONE. WHAT THEY SAY IS ESSENTIALLY WE DON'T HAVE
19 TO DO THAT. ALL WE HAVE TO DO IS HAVE YOU PROVE TO US
20 THAT IT CAN'T BE DONE. AND ONE OF THE THINGS YOU WOULD
21 HAVE TO DO OF COURSE IS YOU CAN'T WILLY-NILLY MOVE VOTES
22 FROM ONE PARTY OR ONE CANDIDATE TO ANOTHER AT WILL. THE
23 REASON IS THAT TREMENDOUS SUSPICION WOULD BE RAISED
24 IMMEDIATELY IF THE VOTES WERE SUFFICIENTLY OUT OF WHACK
25 IN A PARTICULAR PRECINCT EVEN, LET ALONE A COUNTY.

1 WHICH MEANS THAT THIS SUPER WONDERFUL MALWARE HAS TO
2 HAVE WITHIN IT A DATABASE OF ALL OF THE PRECINCTS IN
3 PENNSYLVANIA AND KNOW EXACTLY AS OF ELECTION DAY HOW
4 MUCH IT'S POSSIBLE TO MOVE THE VOTE WITHOUT PEOPLE
5 GETTING SUSPICIOUS. AS WE KNOW FROM POLLING WHETHER OR
6 NOT SOMEONE IS LIKELY TO WIN THE ELECTION, THE
7 ASSESSMENT OF THAT CHANGES TREMENDOUSLY DURING THE DAYS
8 LEADING UP TO THE ELECTION. SO IF THIS MALWARE IS
9 SOMEHOW IMPLANTED IN THE MACHINE LONG IN ADVANCE OF THE
10 ELECTION, IT CAN'T POSSIBLY OPERATE PROPERLY.

11 ANOTHER THING THAT I'VE CHALLENGED THEM
12 WITH, AND NOBODY HAS COME UP WITH AN ANSWER TO IT, IS TO
13 ACTUALLY SHOW ME THIS CODE THAT WE CANNOT DETECT AS
14 PRESENT IN THE MACHINE AFTER THE ELECTION. WE CAN
15 CERTAINLY DETECT THAT IT IS PRESENT IN THE MACHINE
16 BEFORE THE ELECTION, BECAUSE IT HAS NOT HAD A CHANCE TO
17 ERASE ITSELF. I CHALLENGED THEM AGAIN TO TELL ME HOW
18 ONE WOULD EVER INTRODUCE THIS MALWARE INTO A SUFFICIENT
19 NUMBER OF VOTING MACHINES TO CAUSE ANY REAL CHANGE IN
20 THE ELECTION. NOBODY HAS EVER BEEN ABLE TO COME UP WITH
21 THAT. NO ONE HAS EVER WRITTEN ABOUT IT EVEN.

22 Q. YOU'VE MENTIONED A COUPLE OF TIMES LOGS AND
23 PRINTOUTS AND THINGS LIKE THAT. AND I JUST WANT TO MAKE
24 SURE THAT THIS IS COVERED. DO YOU UNDERSTAND ONE OF THE
25 POSITIONS THE PLAINTIFFS ARE TAKING IS THAT THE DRE'S

1 ARE PAPERLESS?

2 A. YES. THE WORD IS USED FREQUENTLY AND
3 PEJORATIVELY TO DESCRIBE ELECTRONIC VOTING MACHINES.

4 Q. ARE THESE ELECTRONIC VOTING MACHINES PAPERLESS?

5 A. THERE IS NOT A SINGLE PAPERLESS VOTING MACHINE
6 IN PENNSYLVANIA, AND I DON'T KNOW OF ANY IN THE REST OF
7 THE COUNTRY. IN FACT, IT'S A REQUIREMENT OF THE
8 PENNSYLVANIA ELECTION CODE THAT EVERY MACHINE BE CAPABLE
9 OF MAINTAINING A PERMANENT PHYSICAL RECORD OF EVERY VOTE
10 CAST. AND WE IN THE DEPARTMENT OF STATE, WHEN I WAS
11 DOING EXAMINATIONS, INTERPRETED PERMANENT PHYSICAL
12 RECORD TO MEAN PAPER OR ITS EQUIVALENT, NOT AN
13 ELECTRONIC RECORD IN FIRMWARE.

14 Q. I WOULD LIKE TO TALK TO YOU ABOUT ANOTHER
15 SCENARIO POSITED, THE RUSSIANS HACKING OF THE DNC IN
16 ARIZONA AND ILLINOIS AND THAT THING. DO YOU HAVE AN
17 OPINION AS TO THE LIKELIHOOD OF WHETHER THAT WOULD HAVE
18 HAPPENED?

19 A. WELL, I'M NOT GIVING YOU AN OPINION ON WHETHER
20 THE RUSSIANS HACKED THE DNC OR NOT. I THINK YOU ARE
21 ASKING ME WHETHER THE RUSSIANS COULD HAVE HACKED THE
22 VOTING SYSTEM OF PENNSYLVANIA.

23 Q. SURE.

24 A. AS FAR AS I KNOW, THE DNC DOES NOT RUN
25 PENNSYLVANIA ELECTIONS. AS FAR AS I KNOW, THE SERVER

1 THAT WAS HACKED INTO AT THE DNC WAS AN E-MAIL SERVER.
2 WE DON'T CONDUCT ELECTIONS IN PENNSYLVANIA VIA E-MAIL.
3 SO NOBODY HAS TOLD ME IN THIS RUSSIAN HACK SCENARIO
4 EXACTLY WHAT IT WOULD BE THAT THEY WOULD BE HACKING.
5 THERE IS NOT A CENTRAL PLACE IN PENNSYLVANIA THAT HAS A
6 COMPUTER THAT YOU COULD HACK THAT WOULD CHANGE THE
7 OUTCOME OF AN ELECTION. THERE ARE CENTRAL COMPUTERS
8 THAT MAINTAIN RECORDS OF REGISTERED VOTERS. THAT IS A
9 DIFFERENT SCENARIO.

10 Q. WHILE WE ARE TALKING ABOUT IT, IN PENNSYLVANIA,
11 IS IT YOUR UNDERSTANDING THAT THE ELECTION PROCESS IS
12 VERY DECENTRALIZED DOWN TO THE COUNTY AND EVEN PRECINCT
13 LEVEL?

14 A. WELL, IT IS DECENTRALIZED IN MOST OF THE
15 COUNTRY. ELECTIONS ARE CONDUCTED COUNTY BY COUNTY IN
16 THE UNITED STATES, AND I THINK THERE ARE ABOUT SOMETHING
17 LIKE 3,150 COUNTIES.

18 MS. FRICK: OBJECTION, YOUR HONOR. THIS
19 GOES BEYOND THE SCOPE OF HIS EXPERTISE.

20 THE COURT: OVERRULED.

21 THE WITNESS: IN PENNSYLVANIA WE HAVE A
22 NUMBER OF DIFFERENT TYPES OF VOTING SYSTEMS COMING FROM
23 DIFFERENT MANUFACTURERS THAT ARE USED IN GEOGRAPHICALLY
24 DISPARATE PARTS OF THE STATE.

25 THE COURT: BEFORE YOU CONTINUE, I

1 APOLOGIZE. JUST IN LIGHT OF MS. FRICK'S OBJECTIONS, I
2 ASSUME YOU ARE MOVING TO ADMIT THE AFFIDAVIT OF DR.
3 SHAMOS AND HIS REPORT?

4 MR. JOEL: YES, YOUR HONOR. I WAS GOING
5 TO DO IT AT THE CLOSE OF HIS TESTIMONY, BUT, YES.

6 THE COURT: I'M LARGELY OVERRULING YOUR
7 OBJECTIONS, MS. FRICK, BASED ON WHAT I HAVE SEEN IN
8 THESE DOCUMENTS.

9 GO ON, DOCTOR. I APOLOGIZE. THEY WILL
10 BE ADMITTED.

11 THE WITNESS: WHERE WERE WE?

12 BY MR. JOEL:

13 Q. YOU WERE TALKING ABOUT THE DECENTRALIZED
14 NATURE --

15 THE COURT: ALL OVER -- LARGELY
16 DECENTRALIZED ALL OVER THE COUNTRY.

17 THE WITNESS: AND IT'S DECENTRALIZED ALSO
18 IN PENNSYLVANIA. THERE IS NO CENTRAL PLACE THAT ONE
19 COULD ATTACK THAT WOULD INFECT THESE VARIOUS COMPLETELY
20 DIFFERENT VOTING SYSTEMS THAT ARE DISTRIBUTED BY TOTALLY
21 DIFFERENT MANUFACTURERS. ONE WOULD HAVE TO ATTACK, IF
22 ANYTHING, THE INDIVIDUAL COUNTIES. AS I SAID BEFORE,
23 WHAT YOU WOULD BE ATTACKING THERE, AND I'M NOT SURE HOW
24 YOU WOULD DO IT BECAUSE THEY ARE NOT CONNECTED TO THE
25 INTERNET. BUT EVEN IF YOU WERE ABLE TO ATTACK THE

1 COUNTY CENTRAL COMPUTER, THAT IS NOT AN EFFECTIVE WAY TO
2 GET MALWARE DOWN TO ANY OF THE VOTING MACHINES.

3 BY MR. JOEL:

4 Q. LET'S TALK ABOUT THE STUXNET. ARE YOU AWARE
5 THAT THAT IS ONE OF THE SCENARIOS THAT PLAINTIFFS ARE
6 POSITING?

7 MS. FRICK: I'M SORRY, YOUR HONOR. I
8 HAVE TO OBJECT.

9 THE COURT: WELL IT'S IN ONE OF YOUR
10 AFFIDAVITS SO I'M GOING TO OVERRULE IT.

11 THE WITNESS: YES.

12 BY MR. JOEL:

13 Q. DO YOU HAVE AN OPINION AS TO WHETHER OR NOT THAT
14 IS A POSSIBLE WAY TO AFFECT THE PENNSYLVANIA VOTING
15 MACHINES SUCH THAT VOTES WOULD BE ALTERED?

16 A. YEAH, I DO HAVE AN OPINION.

17 Q. IS THAT WITHIN A REASONABLE DEGREE OF CERTAINTY
18 IN YOUR FIELD?

19 A. YES.

20 Q. WHAT IS THE OPINION?

21 A. OKAY. WELL, LET'S LOOK AT WHAT HAPPENED WITH
22 STUXNET. SO FOR YEARS THE OPPONENTS OF ELECTRONIC
23 VOTING HAVE BEEN STYMIED BY THE IDEA THAT IF A MACHINE
24 IS NOT CONNECTED TO THE INTERNET, THEN NORMAL HACKING
25 TECHNIQUES WILL NOT GET TO IT. AFTER STUXNET THEY GOT

1 AN IDEA, WHICH IS, AND STUXNET PROVES, THAT YOU CAN
2 INFECT A MACHINE EVEN IF IT IS NOT CONNECTED TO THE
3 INTERNET AND NEVER IN ITS LIFE HAS BEEN CONNECTED TO THE
4 INTERNET. I AGREE WITH THAT.

5 SO WHAT THE STUXNET WORM WAS, IT WAS
6 MALWARE THAT WAS INSERTED AT THE MANUFACTURER. IT WAS
7 SIEMENS, WHO WAS THE MANUFACTURER OF THE IRANIAN
8 CENTRIFUGES. BECAUSE IT WAS INFECTED AND NO TESTING WAS
9 DONE, THE WORM MADE IT INTO IRANIAN CENTRIFUGES. IT
10 ACTUALLY MADE IT INTO MANY OTHER CENTRIFUGES, TOO, BUT
11 WAS PROGRAMMED TO ONLY ATTACK THE IRANIAN ONES.

12 NOW, THIS IS NOT FEASIBLE HERE, WITH
13 VOTING SYSTEMS, FOR SEVERAL REASONS. FIRST OF ALL, WE
14 DID NOT JUST GO BUY THESE SYSTEMS YESTERDAY, AND SO THIS
15 -- IF SUCH A WORM EXISTS IN VOTING SYSTEMS IT IS THERE
16 NOW. AND IT WOULD BE DISCOVERED DURING THE INDEPENDENT
17 TESTING AUTHORITY TESTING. AND IF IT HAD BEEN
18 INTRODUCED AFTER THAT, THEN THERE WOULD HAVE TO BE A NEW
19 VERSION OF THE SOFTWARE ACTUALLY PHYSICALLY DELIVERED TO
20 EACH MACHINE. SO IT'S THE SAME THING AS HAVING TO GO
21 AND MODIFY 4200 MACHINES IN A PARTICULAR COUNTY. THERE
22 IS NO PRACTICAL WAY IN WHICH IT COULD CAN BE DONE,
23 ALTHOUGH YES, IT'S TRUE, THE IRANIAN CENTRIFUGES WERE
24 NOT CONNECTED TO THE INTERNET.

25 Q. AND IN REVIEWING THE PLAINTIFFS' MATERIALS, WAS

1 THERE SOME ARTICLE IN THERE ABOUT UKRAINE AND THEIR
2 ELECTION?

3 A. YES, THERE WAS.

4 Q. DOES THAT HAVE ANY IMPACT IN YOUR CONCLUSIONS
5 THAT THE VOTING MACHINES HERE IN THE COMMONWEALTH ARE
6 NOT SUSCEPTIBLE TO HACKING -- AN ALTERATION?

7 A. YEAH, I READ THAT ARTICLE. AND BASICALLY WHAT
8 IT SAID WAS THAT THERE WERE SUSPICIONS THAT THE RUSSIANS
9 ATTACKED WHAT'S REFERRED TO IN THE UKRAINE AS THE
10 CENTRAL ELECTION COMMISSION. SO THE CENTRAL ELECTION
11 COMMISSION IS A PLACE FROM WHICH INFORMATION ABOUT THE
12 ELECTION IS DISTRIBUTED ALL THROUGH THE COUNTRY. WE
13 DON'T HAVE ANYTHING LIKE THAT. SO THERE IS NO CENTRAL
14 PLACE THAT ONE COULD GO AND ATTACK IN SUCH A MANNER.
15 IT'S SIMILAR TO THE RUSSIAN DNC HACK SCENARIO.

16 Q. SO JUST TO SUMMARIZE, I HAVE ONE MORE EXHIBIT TO
17 SHOW YOU. IS IT YOUR OPINION THAT THESE SCENARIOS
18 POSITED BY PLAINTIFF ARE NOT POSSIBLE AS A WAY OF
19 INFECTING AND AFFECTING THE VOTES HERE IN THE
20 COMMONWEALTH?

21 A. WELL, IT'S TOUGH TO SAY THAT SOMETHING IS
22 IMPOSSIBLE.

23 Q. I DID NOT SAY IMPOSSIBLE. I SAID IS IT
24 POSSIBLE?

25 A. I THINK THAT IS THE OPPOSITE OF IMPOSSIBLE. BUT

1 I THINK THE IDEA IS THAT -- MY FEELING IS THAT THE
2 SCENARIOS THAT HAVE BEEN POSITED ARE APPROXIMATELY AS
3 LIKELY AS THE FACT THAT ANDROIDS FROM OUTER SPACE ARE
4 LIVING AMONGST US AND PASSING AS HUMANS. IT MIGHT BE
5 POSSIBLE, YET THERE IS NOT ANY EVIDENCE THAT IT IS
6 HAPPENING.

7 Q. AND YOU SAID IT WAS YOUR FEELING. IS THAT ALSO
8 YOUR EXPERT OPINION?

9 A. YES.

10 MR. JOEL: MAY I APPROACH ONE MORE TIME,
11 YOUR HONOR?

12 THE COURT: YES.

13 BY MR. JOEL:

14 Q. SHOWING YOU WHAT HAS BEEN MARKED AS D 6. CAN
15 YOU IDENTIFY FOR US WHAT THOSE ARE AND THE SIGNIFICANCE
16 OF THEM?

17 A. YES. SO THESE ARE THE REPORTS THAT THE
18 SECRETARY OF THE COMMONWEALTH IS REQUIRED TO FILE UPON
19 CERTIFYING A VOTING SYSTEM, AND THERE ARE SIX OR SEVEN
20 OF THESE. ALL OF THE VOTING SYSTEMS IN PENNSYLVANIA,
21 USED IN PENNSYLVANIA WERE SUBJECTED TO RECERTIFICATION
22 IN 2012, I THINK AS A RESULT OF THE BANFIELD CASE, NOT
23 BECAUSE IT WAS ORDERED BUT BECAUSE THE SECRETARY OF THE
24 COMMONWEALTH THOUGHT THAT IT WOULD BE PRUDENT TO DO
25 THAT. SO THESE ARE THE SECRETARY'S REPORTS FROM ALL OF

1 THOSE EXAMINATIONS.

2 Q. AND THOSE ARE FOR THE MACHINES, THE DRE'S THAT
3 ARE -- WERE IN USE IN THIS LAST ELECTION?

4 A. YES.

5 Q. ALL OF THEM WERE CERTIFIED AS BEING APPROPRIATE
6 TO USE FOR THE ELECTION?

7 A. YES. IN FACT, VIRTUALLY ALL OF THESE BEGIN WITH
8 A PARAGRAPH THAT TALKS ABOUT THE EXAMINATION THAT I DID
9 OF THOSE SYSTEMS SOME YEARS EARLIER, AND THEN DISCUSSION
10 ABOUT WHAT WAS DONE SUBSEQUENTLY DURING THE
11 RE-EXAMINATION EXAMS.

12 MR. JOEL: I WOULD MOVE FOR THE ADMISSION
13 OF D 6, AND WITH THAT I HAVE NO MORE QUESTIONS FOR YOU.

14 THE COURT: ANY OBJECTION?

15 MS. FRICK: NO OBJECTION, YOUR HONOR.

16 MR. TABAS: NONE, YOUR HONOR.

17 THE COURT: VERY WELL. IT WILL BE
18 ADMITTED.

19 (DEFENSE EXHIBIT D 6, ADMITTED INTO
20 EVIDENCE.)

21 THE COURT: DO YOU HAVE ANY QUESTIONS FOR
22 THIS WITNESS, MR. TABAS?

23 MR. TABAS: NO, I DON'T, YOUR HONOR.

24 THE COURT: MS. FRICK.

25 MS. FRICK: THANK YOU.

1 THE COURT: THIS COUNTS AGAINST THEIR
2 TIME.

3 MS. FRICK: I'M WELL AWARE.

4 THE COURT: SO SPEAK SLOWLY.

5 CROSS EXAMINATION

6 BY MS. FRICK:

7 Q. GOOD AFTERNOON, DR. SHAMOS.

8 A. GOOD AFTERNOON.

9 Q. AM I PRONOUNCING YOUR NAME CORRECTLY?

10 A. YES, YOU ARE.

11 Q. MR. SHAMOS, YOU SAID THAT YOU HAVE TESTIFIED IN
12 A NUMBER OF CASES BEFORE, IS THAT RIGHT?

13 A. YES.

14 Q. AND IN SOME OF THOSE CASES YOU'VE TESTIFIED AS
15 AN EXPERT FOR SEQUOIA, IS THAT RIGHT?

16 A. IN PATENT CASES, YES.

17 Q. AND SEQUOIA IS A MANUFACTURER OF VOTING
18 MACHINES?

19 A. YES.

20 Q. THEY MANUFACTURE MACHINES THAT ARE USED IN
21 PENNSYLVANIA, IS THAT RIGHT?

22 A. YES.

23 Q. AND YOU HAVE BEEN PAID BY SEQUOIA FOR THAT
24 TESTIMONY, RIGHT?

25 A. YES, I HAVE.

1 Q. YOU HAVE BEEN PAID HUNDREDS OF THOUSANDS OF
2 DOLLARS, RIGHT?

3 A. ULTIMATELY, YES.

4 Q. AND YOU EXPECT TO BE PAID HUNDREDS OF THOUSANDS
5 OF DOLLARS IN THE FUTURE FOR YOUR WORK WITH SEQUOIA,
6 RIGHT?

7 A. IF I DO ANY. THERE AREN'T ANY -- I HAVE NO
8 CURRENT CASES INVOLVING SEQUOIA.

9 Q. WERE YOU -- HAD YOU WORKED AS AN EXPERT FOR
10 SEQUOIA IN 2006?

11 A. NO.

12 Q. WHEN WAS THE FIRST TIME THAT YOU WORKED AS AN
13 EXPERT FOR SEQUOIA?

14 A. I THINK I CAN HELP YOU WITH THIS LINE OF
15 QUESTIONING BY TELLING YOU THAT SINCE ACCEPTING ANY
16 MONEY FROM ANY ELECTION SYSTEM VENDOR, I HAVE NOT
17 PERFORMED ANY VOTING SYSTEM EXAMINATIONS EITHER FOR THAT
18 VENDOR OR FOR A DIFFERENT VENDOR.

19 Q. SO WERE YOU A PAID EXPERT FOR SEQUOIA IN 2006?

20 A. NO. THAT IS A CONSEQUENCE OF THE ANSWER I JUST
21 GAVE.

22 Q. WHEN WAS THE FIRST TIME THAT YOU WERE A PAID
23 EXPERT FOR SEQUOIA?

24 A. I DON'T RECALL, BUT IT WAS AFTER 2006.

25 Q. HAVE YOU EVER BEEN DENIED TENURE AS A COMPUTER

1 SCIENCE PROFESSOR?

2 A. NO.

3 Q. AT CARNEGIE MELLON?

4 A. NO.

5 THE COURT: I'M SORRY. IF YOU HAD
6 QUESTIONS ABOUT HIS EXPERTISE, YOU SHOULD HAVE ASKED
7 THEM BEFORE I QUALIFIED HIM. I WOULD ASK YOU TO MOVE ON
8 TO THE SUBSTANCE OF HIS TESTIMONY.

9 MS. FRICK: YES, I AM MOVING ON, YOUR
10 HONOR.

11 BY MS. FRICK:

12 Q. IN 2004, YOU TESTIFIED BEFORE CONGRESS, IS THAT
13 RIGHT?

14 A. YES.

15 Q. AND YOU SAID THERE: I'M HERE TODAY TO OFFER MY
16 OPINION THAT THE SYSTEM WE HAVE FOR TESTING AND
17 CERTIFYING VOTING EQUIPMENT IN THIS COUNTRY IS NOT ONLY
18 BROKEN, BUT IT IS VIRTUALLY NONEXISTENT. IS THAT RIGHT?

19 A. THAT'S RIGHT.

20 Q. AND IN 2006 YOU TESTIFIED AGAIN BEFORE CONGRESS,
21 RIGHT?

22 A. YES.

23 Q. YOU REPEATED THAT OPINION. YOU SAID THAT YOU
24 REAFFIRM IT. IS THAT RIGHT?

25 A. THAT'S RIGHT.

1 Q. NOW, DO YOU REMEMBER GIVING AN INTERVIEW TO THE
2 HILL, IT'S A PUBLICATION, IN 2014?

3 A. I DON'T RECALL IT, BUT I DON'T DENY THAT I DID
4 IT.

5 Q. YOU WERE ASKED ABOUT POTENTIAL HACKING OF VOTING
6 MACHINES. AND YOU SAID -- ISN'T IT TRUE THAT YOU TOLD
7 THE HILL THAT IT WOULD BE POSSIBLE TO STEAL A COUPLE
8 HUNDRED VOTES FOR YOUR GUY. IS THAT RIGHT?

9 A. YES. YES. THERE ARE MANY WAYS OF DOING THAT,
10 WHETHER THE ELECTION IS AN ELECTRONIC ONE OR A PAPER
11 ONE.

12 Q. AND ARE YOU AWARE THAT THIS MORNING PRESIDENT
13 OBAMA ORDERED A REVIEW OF ALL EVIDENCE OF HACKING INTO
14 THIS ELECTION?

15 A. YES, I AM.

16 Q. AND WOULD YOU SAY THAT HE HAD THE SAME FACTUAL
17 BASIS FOR ORDERING THAT REVIEW AS HE WOULD HAVE HAD HE
18 ORDERED A REVIEW OF WHETHER ALIENS ARE LIVING AMONG US?

19 A. IF THERE WERE EVIDENCE THAT ALIENS WERE LIVING
20 AMONG US, I WOULD THINK IT INCUMBENT UPON THE PRESIDENT
21 TO HAVE THAT INVESTIGATED.

22 Q. I TAKE IT BY THAT ANSWER YOU AGREE THAT THERE IS
23 EVIDENCE OF HACKING IN THIS ELECTION?

24 A. THERE IS EVIDENCE THAT ATTEMPTS HAVE BEEN MADE
25 TO ACCESS VOTING CENTRALIZED COMPUTERS IN THE UNITED

1 STATES.

2 Q. YOU AGREE THERE IS EVIDENCE THAT THERE HAS BEEN
3 HACKING IN THIS ELECTION?

4 A. NO. I DON'T AGREE WITH THAT. I AGREE THERE IS
5 EVIDENCE THAT ATTEMPTS HAVE BEEN MADE. IN FACT, THERE
6 IS NO EVIDENCE THAT ANYTHING WAS HACKED.

7 Q. NOW, THE DRE MACHINES THAT ARE USED IN
8 PENNSYLVANIA USE REMOVABLE MEDIA, IS THAT RIGHT?

9 A. AMONG NONREMOVABLE MEDIA ALSO, THEY DO HAVE
10 REMOVABLE MEDIA, THAT IS TRUE.

11 Q. THAT REMOVABLE MEDIA INCLUDES THINGS LIKE MEMORY
12 CARTRIDGES, RIGHT?

13 A. YES.

14 Q. THE CARTRIDGES HAVE THE BALLOT INFORMATION ON
15 THEM?

16 A. WELL, SO SOME DO, SOME DON'T. THE PEB'S THAT WE
17 WERE TALKING DO HAVE BALLOT INFORMATION ON THEM, YES.

18 Q. BUT FOR THE OTHER MACHINES THAT DON'T USE PEB'S,
19 THERE ARE MEMORY CARTRIDGES THAT HAVE THE BALLOT
20 INFORMATION ON THEM, RIGHT?

21 A. THERE ARE MEMORY CARTRIDGES. THE QUESTION IS
22 WHETHER THOSE ARE INSERTED FOR INDIVIDUAL VOTERS OR
23 WHETHER THEY ARE INSERTED AT THE BEGINNING OF THE
24 ELECTION. BUT THERE CERTAINLY ARE MEMORY CARTRIDGES
25 THAT HAVE BALLOT INFORMATION, YES.

1 Q. THAT BALLOT INFORMATION, WHETHER IT IS FROM
2 MEMORY CARTRIDGES OR FOR PEB'S, AS YOU TESTIFIED, IS
3 PROGRAMMED AT A CENTRAL ELECTION MANAGEMENT COMPUTER,
4 RIGHT?

5 A. YES, BUT THAT BALLOT INFORMATION IS DATA. IT'S
6 NOT CODE.

7 Q. I UNDERSTAND. MY QUESTION IS, AND THAT -- WHERE
8 IT IS PROGRAMMED CAN BE THE COUNTY'S CENTRAL ELECTION
9 MANAGEMENT COMPUTER, RIGHT?

10 A. IT USUALLY IS.

11 Q. AND AFTER THE ELECTION, THE PEB'S AND THE --
12 AND/OR THE MEMORY CARTRIDGES, DEPENDING ON THE TYPE OF
13 MACHINE, CARRY THE VOTE TALLIES BACK TO THE CENTRAL
14 COMPUTER MACHINE.

15 A. FOR UNOFFICIAL PURPOSES ONLY.

16 Q. THOSE CARTRIDGES CAN SPREAD A VIRUS, CAN'T THEY?

17 A. NO.

18 Q. WELL, YOU KNOW WHAT A FLASH DRIVE IS, RIGHT?

19 A. YES.

20 Q. YOU KNOW THAT IF YOU PUT A FLASH DRIVE INTO A
21 COMPUTER WITH A VIRUS, THAT VIRUS CAN INFECT THE FLASH
22 DRIVE, RIGHT?

23 A. IT CERTAINLY DEPENDS ON THE OPERATING SYSTEM,
24 THE ARCHITECTURE AND THE CONFIGURATION OF THE MACHINE.
25 IT CAN'T HAPPEN WITH PEB'S.

1 Q. MY QUESTION IS, ON FLASH DRIVES, WHETHER WHEN
2 YOU PUT A FLASH DRIVE INTO A MACHINE, IT CAN INFECT THE
3 FLASH DRIVE?

4 A. IN A HYPOTHETICAL CONTEXT OUTSIDE OF
5 PENNSYLVANIA'S VOTING SYSTEMS, YES, IT CAN.

6 Q. WHEN YOU THEN TAKE THAT FLASH DRIVE TO A NEW
7 COMPUTER, YOU CAN INFECT THAT NEW COMPUTER WITH THE
8 VIRUS FROM THE FIRST COMPUTER. RIGHT?

9 A. AGAIN IN A CONTEXT TOTALLY OUTSIDE OF
10 PENNSYLVANIA'S VOTING SYSTEMS, YES, THAT IS POSSIBLE.

11 Q. AND SO LET ME GO BACK TO YOUR EXPERTISE HERE.
12 YOU ARE NOT AN EXPERT IN COMPUTER SCIENCE, IS THAT
13 RIGHT?

14 A. WELL, I WAS NOT QUALIFIED HERE TODAY AS ONE, BUT
15 I CERTAINLY AM ONE.

16 Q. FOR PURPOSES OF TODAY'S HEARING YOU ARE NOT ONE,
17 AS WE HAVE AGREED?

18 A. MAYBE YOU SHOULD NOT ASK ME QUESTIONS ABOUT IT
19 THEN.

20 THE COURT: ALL RIGHT. ALL RIGHT. ALL
21 RIGHT. ASK ANOTHER QUESTION, PLEASE.

22 MS. FRICK: I'M GETTING TO MY QUESTION,
23 YOUR HONOR.

24 BY MS. FRICK:

25 Q. THE QUESTION IS WHETHER IT'S POSSIBLE FOR MEMORY

1 CARTRIDGES, JUST LIKE OTHER REMOVABLE MEDIA, TO SPREAD A
2 VIRUS FROM A MACHINE TO MACHINE.

3 A. AND I ANSWERED YES, TOTALLY OUTSIDE THE CONTEXT
4 OF PENNSYLVANIA'S VOTING SYSTEMS.

5 THE COURT: I HAVE REVIEWED THE DOCTOR'S
6 CV AND I'M PERFECTLY PREPARED TO QUALIFY HIM AS AN
7 EXPERT IN COMPUTER SCIENCE, AND I DO SO. YOU CAN ASK
8 HIM ANYTHING YOU WANT, MS. FRICK.

9 BY MS. FRICK:

10 Q. OKAY.

11 NOW SPREADING A VIRUS IN THE METHOD THAT
12 WE JUST TALKED ABOUT THAT YOU AGREED WAS POSSIBLE DOES
13 NOT REQUIRE AN INTERNET CONNECTION, RIGHT?

14 A. TOTALLY OUTSIDE THE CONTEXT OF PENNSYLVANIA'S
15 VOTING SYSTEMS, YES, IT DOESN'T.

16 Q. THANK YOU. I WOULD APPRECIATE IT IF YOU JUST
17 ANSWER MY QUESTIONS.

18 THAT IS WHY WE WENT -- THAT IS WHAT WE
19 HAVE ALREADY ESTABLISHED THROUGH THE STUXNET VIRUS,
20 RIGHT? THERE WAS NO INTERNET CONNECTION WITH THE
21 CENTRIFUGES, CORRECT?

22 A. YES, I TESTIFIED TO THAT.

23 Q. EXACTLY.

24 NOW THE SOFTWARE ON THE ELECTRONIC VOTING
25 MACHINES GETS UPDATED FROM TIME TO TIME. I BELIEVE YOU

1 TESTIFIED TO THAT?

2 A. THAT IS TRUE.

3 Q. AND THAT UPDATE COMES FROM THE MANUFACTURER?

4 A. WELL, ULTIMATELY IT DOES COME FROM THE
5 MANUFACTURER, ALTHOUGH IT IS TESTED BY THE INDEPENDENT
6 TESTING AUTHORITY, AND IN GENERAL, THE DISTRIBUTION OF
7 THE SOFTWARE COMES FROM THEM. OTHERWISE IT WOULD BE
8 POSSIBLE TO DO A BAIT AND SWITCH. THE VENDOR COULD SEND
9 GOOD SOFTWARE TO THE INDEPENDENT TESTING AUTHORITY.
10 UPON GETTING A CERTIFICATION FROM THEM, IT COULD THEN
11 SEND BAD SOFTWARE TO THE JURISDICTIONS. SO TO PREVENT
12 THAT, IT'S THE ITA THAT DISTRIBUTES THE SOFTWARE.

13 Q. THE ITA, YOU SAID, RUNS TESTS ON THESE UPDATES,
14 RIGHT?

15 A. YES.

16 Q. AND DOES IT DO A FORENSIC EXAMINATION OF THE
17 CODE?

18 A. YES.

19 Q. AND THEN THAT -- AND THEN HAVE YOU EVER BEEN
20 PRESENT FOR WHEN THOSE UPDATES ARE DISTRIBUTED?

21 A. I'M TRYING TO RECALL. I DON'T THINK SO. I
22 MEAN, IF YOU MEAN DISTRIBUTED FOR ACTUAL USE IN A
23 COUNTY, NO. I HAVE DONE IT AT THE SECRETARY OF THE
24 COMMONWEALTH'S OFFICE DURING OUR EXAMINATIONS, BUT NOT
25 IN AN ACTUAL PRECINCT, NO.

1 Q. HAVE YOU BEEN PRESENT FOR THE TESTING OF THOSE
2 SOFTWARE UPDATES?

3 A. YES.

4 Q. AND CAN YOU DESCRIBE WHAT THAT TESTING IS?

5 A. YES. I'M NOT -- I DON'T DO IT COMMONLY, BUT WE
6 DID A COMPLETE FORENSIC REVIEW IN SARASOTA COUNTY,
7 FLORIDA IN WHICH SIX COMPUTER SCIENTISTS SAT IN A ROOM
8 FOR FIVE DAYS EXAMINING CODE, COMPILING PORTIONS OF
9 CODE, TESTING CODE, COMPUTING HASH FUNCTIONS, ET CETERA.

10 Q. THAT WAS IN SARASOTA, FLORIDA, IS THAT RIGHT?

11 A. YES.

12 Q. NOW THE OPERATING SYSTEMS ON THE CENTRAL
13 ELECTION MANAGEMENT COMPUTERS, THEY NEED TO GET UPDATED
14 FROM TIME TO TIME AS WELL, RIGHT?

15 A. YES.

16 Q. AND THOSE UPDATES TO THE OPERATING SYSTEMS ARE
17 DOWNLOADED FROM THE INTERNET?

18 A. I THINK THEY ARE OFTEN ARE. THAT CAN'T BE DONE
19 ON THE CENTRAL COMPUTER THAT IS USED IN THE COUNTY
20 BECAUSE IT'S NOT ALLOWED TO BE CONNECTED TO THE
21 INTERNET. SO IT HAS TO BE THROUGH REMOVABLE MEDIA.

22 Q. SO IT WOULD BE DOWNLOADED FROM THE INTERNET ON
23 TO SOME OTHER COMPUTER, IS THAT RIGHT?

24 A. NOT NECESSARILY. A DVD MIGHT BE OBTAINED FROM
25 THE DISTRIBUTOR OF THE OPERATING SYSTEM.

1 Q. BUT YOU ALSO SAID IT COULD BE DOWNLOADED FROM
2 THE INTERNET AND TRANSFERRED BY REMOVABLE MEDIA,
3 CORRECT?

4 A. NO. WHAT I SAID WAS, OUTSIDE THE CONTEXT OF THE
5 PENNSYLVANIA SYSTEMS. IF YOU MEAN CAN YOU HAVE A NEW
6 VERSION OF AN OPERATING SYSTEM DOWNLOADED OVER THE
7 INTERNET? YES. BUT THAT IS NOT PERMITTED IN
8 PENNSYLVANIA. IT'S EXPRESSLY AGAINST THE -- I CAN READ
9 YOU THE STATEMENTS IN THE CERTIFICATION -- CERTIFICATION
10 DOCUMENTS. IT'S FORBIDDEN BY THE SECRETARY OF THE
11 COMMONWEALTH.

12 Q. SO THE UPDATES TO THE OPERATING SYSTEMS ON THE
13 CENTRAL MANAGEMENT COMPUTERS COME ONLY FROM THE
14 MANUFACTURER. IS THAT YOUR TESTIMONY?

15 A. NO. THERE ARE DIFFERENT MANUFACTURERS. THERE
16 IS A MANUFACTURER OF THE OPERATING SYSTEM AND THERE IS A
17 MANUFACTURER OF THE ELECTION MANAGEMENT SYSTEM. I
18 THOUGHT YOU WERE REFERRING TO THE OPERATING SYSTEM, LIKE
19 FOR EXAMPLE, WINDOWS 10, SOMETHING LIKE THAT. THAT
20 COMES FROM MICROSOFT.

21 Q. RIGHT. AND THAT UPDATE IS DOWNLOADED FROM THE
22 INTERNET, RIGHT? THAT IS WHAT YOU TESTIFIED?

23 A. NO. IT CAN BE. THAT IS WHAT -- I DO IT AT HOME
24 THAT WAY. BUT THAT IS NOT THE WAY PEOPLE WHO RUN THE
25 CENTRAL COMPUTERS IN COUNTIES IN PENNSYLVANIA DO IT

1 BECAUSE --

2 THE COURT: WE HAVE GONE THROUGH THIS --

3 THE WITNESS: -- THEY ARE FORBIDDEN TO DO
4 IT.

5 THE COURT: WE HAVE GONE THROUGH THIS
6 SEVERAL TIMES. PLEASE MOVE ON.

7 MS. FRICK: YOUR HONOR, I DON'T BELIEVE I
8 HAVE AN ACTUAL ANSWER FOR HOW THE --

9 THE COURT: I BELIEVE YOU HAVE YOUR
10 ANSWER. I'M DIRECTING YOU TO MOVE ON.

11 BY MS. FRICK:

12 Q. NOW, HAVE YOU PERSONALLY PARTICIPATED IN THE
13 UPDATE OF OPERATING SYSTEMS ON THE CENTRAL MANAGEMENT
14 COMPUTERS?

15 A. I DON'T RECALL HAVING DONE SO.

16 Q. WHAT ABOUT THE UPDATES TO THE ELECTION
17 MANAGEMENT SOFTWARE ITSELF?

18 A. I HAVE SEEN IT DONE. AGAIN, WE DID IT IN THE
19 SECRETARY OF THE COMMONWEALTH'S OFFICE. I DIDN'T DO IT
20 AT A COUNTY ELECTION BOARD.

21 Q. AND WHEN THE OPERATING -- I'M SORRY, NOT THE
22 OPERATING SYSTEMS. WHEN THE ELECTION MANAGEMENT SYSTEMS
23 ARE UPDATED, THOSE COME FROM -- THOSE UPDATES COME FROM
24 THE MANUFACTURER. IS THAT WHAT YOU TESTIFIED?

25 A. NO, THEY COME FROM THE ITA.

1 Q. WHICH GETS THEM FROM THE MANUFACTURER, RIGHT?

2 A. WELL --

3 THE COURT: YOU REALLY ARE REPEATING
4 OURSELVES.

5 MS. FRICK: I'M SORRY, YOUR HONOR. I
6 BELIEVE MY FIRST LINE OF QUESTIONS WAS ABOUT THE
7 OPERATING SYSTEM. AND I'M TRYING TO UNDERSTAND THE
8 CENTRAL MANAGEMENT --

9 THE COURT: I BELIEVE WE ARE REPEATING
10 OURSELVES.

11 MS. FRICK: I'LL MOVE ON, YOUR HONOR.

12 THE COURT: IF YOU DON'T STOP, I'M GOING
13 TO END YOUR CROSS EXAMINATION.

14 MS. FRICK: I WILL MOVE ON, YOUR HONOR.
15 BY MS. FRICK:

16 Q. NOW, I BELIEVE YOU TESTIFIED, OR IT'S IN THE
17 PAPERS THAT WERE SUBMITTED ALONG WITH YOUR TESTIMONY,
18 THAT YOU ANALYZED THE FIRMWARE IN THE PENNSYLVANIA
19 MACHINES IN 2006, IS THAT RIGHT?

20 A. I DON'T THINK IT SAYS THAT IN THE MOVING PAPERS.
21 I DID AN EXAMINATION OF THE VOTING SYSTEMS THAT WERE
22 THEN CURRENTLY UNDER CERTIFICATION IN PENNSYLVANIA IN
23 2006. I DIDN'T DO PERSONALLY A FORENSIC EXAMINATION OF
24 THE FIRMWARE.

25 Q. HAVE YOU EVER DONE A PERSONAL FORENSIC

1 EXAMINATION OF THE FIRMWARE?

2 A. YES, IN SARASOTA COUNTY.

3 Q. BUT FOR VOTING SYSTEMS USED IN PENNSYLVANIA, YOU
4 HAVE NEVER DONE THAT?

5 A. NO, I HAVEN'T. I RELIED ON THE ITA REPORTS.

6 Q. AND SINCE 2006 HAVE YOU EVER EXAMINED THE VOTING
7 SYSTEMS USED IN PENNSYLVANIA?

8 A. I DON'T RECALL WHETHER I DID ANY IN 2007, BUT I
9 HAVEN'T -- I CERTAINLY HAVE NOT DONE ANY SINCE 2007.

10 Q. SO WOULD YOU AGREE THAT IN GENERAL, TECHNOLOGY
11 HAS CHANGED SINCE 2007?

12 A. THAT IS A REALLY GENERAL STATEMENT. WHAT KIND
13 OF TECHNOLOGY ARE YOU TALKING ABOUT?

14 Q. WELL, WOULD YOU AGREE WITH THE GENERAL STATEMENT
15 THAT TECHNOLOGY HAS CHANGED?

16 THE COURT: I WILL ACCEPT THAT TECHNOLOGY
17 HAS CHANGED SIGNIFICANTLY IN THE LAST TEN YEARS.

18 BY MS. FRICK:

19 Q. SO WE CAN AGREE THAT IT HAS CHANGED
20 SIGNIFICANTLY. WOULD YOU AGREE THAT CYBER SECURITY
21 THREATS HAVE CHANGED SIGNIFICANTLY SINCE 2007.

22 A. YES, I THINK PEOPLE HAVE DEVISED CLEVERER
23 MECHANISMS FOR INFECTING COMPUTERS.

24 Q. YOU WOULD AGREE THAT BEFORE THIS YEAR THERE HAD
25 NEVER BEEN WIDESPREAD REPORTS OF CYBER ATTACKS OR

1 HACKING DURING A PRESIDENTIAL ELECTION BEFORE?

2 A. I'M NOT AWARE OF SUCH REPORTS PREVIOUSLY, NO.

3 Q. NOW, YOU TESTIFIED AT THE BEGINNING OF YOUR
4 TESTIMONY THAT IF YOU TOOK A MACHINE INTO A LAB UNDER
5 PERFECT CONDITIONS, YOU COULD ALWAYS BREAK INTO THESE
6 MACHINES, RIGHT?

7 A. YES.

8 Q. HAVE YOU EVER PERSONALLY HACKED INTO THESE
9 MACHINES?

10 A. YES.

11 Q. WHEN DID YOU DO THAT?

12 A. OH, I WOULD TYPICALLY DO IT DURING LUNCHTIME
13 AT -- WHEN WE DID OUR EXAMINATIONS AND THE VENDOR WAS
14 NOT PRESENT SO THEY COULD NOT SEE WHAT I WAS DOING.

15 Q. AND YOU COULD HACK THESE MACHINES DURING YOUR
16 LUNCH HOUR, RIGHT?

17 A. WELL, I WAS AN EXAMINER. I WAS ALLOWED TO OPEN
18 THE MACHINES. I COULD DO ANYTHING I WANTED TO THEM.
19 NOBODY WAS OBSERVING ME, BECAUSE I WAS TRYING TO TEST
20 WHETHER THEY WERE SECURE OR NOT.

21 Q. AND YOU TESTIFIED BEFORE THAT IT WOULD TAKE TOO
22 LONG FOR SOMEBODY ELSE WHO WAS NOT A SECURITY EXAMINER
23 TO HACK INTO THE MACHINES, RIGHT?

24 A. I DON'T THINK I MADE ANY COMMENT ABOUT WHETHER
25 THE PERSON WAS AN EXAMINER OR NOT. WHAT I THINK I SAID

1 WAS THAT MACHINES IN ACTUAL USE ARE NOT SITTING ON A
2 TABLE THE WAY THEY ARE AT THE SECRETARY'S OFFICE WHEN WE
3 DO AN EXAM. THEY ARE CLOSED UP, THEY ARE SEALED UP,
4 THEY ARE LOCKED. SO THE PROCESS OF GAINING ACCESS TO
5 SUCH A MACHINE AND INSERTING NEW SOFTWARE IN IT UNDER
6 THOSE CONDITIONS IS MUCH MORE DIFFICULT. IT INVOLVES
7 THE BREAKING OF SEALS, DOING THINGS, YOU HAVE TO KNOW
8 WHAT YOU ARE DOING, AND THEN APPLYING A COUNTERFEIT SEAL
9 AT THE END SO NOBODY IS ANY THE WISER. IT TAKES TIME TO
10 DO THAT.

11 Q. UNDERSTOOD. NOW THE MACHINES ARE STORED --
12 BETWEEN ELECTIONS ARE STORED IN SOME SECURE WAREHOUSE,
13 IS THAT RIGHT?

14 A. THEY ARE STORED IN A WAREHOUSE. I KNOW SOME OF
15 THE SECURITY MECHANISMS THAT ARE USED TO PROTECT THE
16 WAREHOUSE, BUT I DON'T KNOW ALL OF THEM.

17 Q. AT SOME POINT THE MACHINES ARE TAKEN TO THE
18 POLLING PLACES, RIGHT?

19 A. THAT'S RIGHT.

20 Q. THEY HAVE TO BE DELIVERED THERE?

21 A. YES.

22 Q. AND THE LOCATION OF THE POLLING PLACES ARE
23 WIDELY PUBLICIZED, RIGHT?

24 A. NO. IN MANY CASES DECADES IN ADVANCE, YES.

25 Q. THAT'S RIGHT. AND THE VOTING MACHINES ARE NOT

1 DELIVERED TO EACH POLLING PLACE ON THE MORNING OF THE
2 ELECTION, ARE THEY?

3 A. NO, THAT IS OBVIOUSLY NOT FEASIBLE.

4 Q. SO THEY ARE DELIVERED A WEEK AHEAD OF TIME?

5 A. IT DEPENDS ON THE COUNTY. IT DEPENDS ON LOTS OF
6 THINGS.

7 Q. THEY ARE DELIVERED AT LEAST A FEW DAYS AHEAD OF
8 TIME?

9 A. THAT'S RIGHT.

10 Q. THE POLLING PLACES ARE PLACES LIKE SCHOOLS,
11 CHURCHES, LIBRARIES, BUILDINGS LIKE THAT, RIGHT?

12 A. YES. IN CALIFORNIA THEY ARE PEOPLE'S PRIVATE
13 HOMES EVEN.

14 Q. AND MOST OF THOSE PLACES DON'T HAVE 24-HOUR
15 SECURITY, DO THEY?

16 A. THAT'S CORRECT.

17 Q. AND THEY DON'T HAVE ARMED GUARDS STANDING OUT
18 FRONT, DO THEY?

19 A. NO.

20 THE COURT: YOU ARE MAKING ARGUMENT.
21 BY MS. FRICK:

22 Q. YOU HAVE HEARD OF CALIFORNIA'S TOP TO BOTTOM
23 REVIEW OF ELECTRONIC VOTING MACHINES, RIGHT?

24 A. YES.

25 Q. AND THAT REVIEW WAS LED BY THE CALIFORNIA

1 SECRETARY OF STATE?

2 A. YES.

3 Q. AND IT WAS CONDUCTED BY -- IT WAS A REVIEW
4 CONDUCTED BY COMPUTER SCIENTISTS?

5 A. THERE WERE CERTAINLY COMPUTER SCIENTISTS ON THE
6 PANEL, YES.

7 Q. FOLLOWING THE REVIEW, CALIFORNIA DECERTIFIED
8 CERTAIN ELECTRONIC VOTING SYSTEMS, RIGHT?

9 A. YES. WE CAN TALK ABOUT THE POLITICS OF THAT IF
10 YOU WOULD LIKE, BUT THE ANSWER IS YES.

11 Q. NOW, THE STATE BANNED THE USE OF THOSE MACHINES
12 IN ELECTIONS BECAUSE THE STATE DETERMINED AFTER ITS
13 REVIEW THAT THESE MACHINES WERE TOO UNRELIABLE, RIGHT?

14 A. NO. BECAUSE THE SECRETARY OF STATE IS AN
15 ELECTED OFFICE IN CALIFORNIA, AND SHE RAN ON THE
16 PLATFORM THAT SHE WAS GOING TO GET RID OF THE CURRENT
17 VOTING MACHINES. THAT IS WHY IT WAS DONE.

18 Q. THE SECRETARY OF STATE'S REPORT AUTHORED BY THE
19 COMPUTER SCIENTISTS FOUND THAT THESE MACHINES WERE
20 UNRELIABLE, RIGHT?

21 A. YES, BUT SHE WAS NOT OBLIGED TO ACCEPT THOSE.

22 Q. THANK YOU.

23 PENNSYLVANIA VOTERS USE MACHINES THAT
24 CALIFORNIA HAS BANNED, CORRECT?

25 A. YES.

1 Q. LEHIGH COUNTY, FOR EXAMPLE, USES A MACHINE
2 BANNED BY CALIFORNIA, RIGHT?

3 A. YES.

4 Q. AND WASHINGTON COUNTY DOES?

5 THE COURT: YOU ARE NOT GOING THROUGH ALL
6 67 COUNTIES.

7 MS. FRICK: I'M NOT, YOUR HONOR. I'M
8 JUST GIVING A COUPLE OF EXAMPLES.

9 THE WITNESS: I DON'T ACTUALLY KNOW WHICH
10 SYSTEM WASHINGTON COUNTY USES, BUT I CAN'T DISPUTE IT.
11 BY MS. FRICK:

12 Q. IN FACT, ABOUT A MILLION PENNSYLVANIA VOTERS ARE
13 REGISTERED IN COUNTIES THAT RELY ON MACHINES THAT
14 CALIFORNIA HAS DECERTIFIED, RIGHT?

15 A. YES. WE DON'T LIVE IN CALIFORNIA.

16 THE COURT: YOU HAVE NOW USED UP ALL THE
17 COMMONWEALTH'S TIME. NO. NO. GO AHEAD.

18 BY MS. FRICK:

19 Q. YOU TESTIFIED THAT -- I BELIEVE YOU USED THE
20 WORD "TYPICALLY" THE CENTRAL COMPUTERS IN THE COUNTY
21 OFFICES ARE DEDICATED SOLELY TO THE PURPOSE OF
22 ELECTIONS, AND THEY ARE NOT CONNECTED TO THE INTERNET,
23 RIGHT?

24 A. RIGHT.

25 Q. BUT THAT DOES NOT MEAN ALWAYS, RIGHT? TYPICALLY

1 DOES NOT MEAN ALWAYS?

2 A. THAT'S RIGHT. IT MEANS THAT THEY ARE SUPPOSED
3 TO NOT DO IT, BUT IT'S POSSIBLE THAT THEY MAY BREAK THE
4 RULES ESTABLISHED BY THE SECRETARY.

5 Q. NOW, YOU SAID THAT YOU AGREED WITH -- IN
6 TESTIMONY THAT PEB'S DISTRIBUTE NEW SOFTWARE, RIGHT?

7 A. UNDER THE CONDITIONS THAT I TESTIFIED ABOUT,
8 YES.

9 Q. AND SO THE PEB'S CAN OVERRIDE THE SOFTWARE ON
10 THE MACHINE, RIGHT?

11 A. UNDER THE CONDITIONS I DISCUSSED, YES.

12 Q. YOU TALKED ABOUT PARALLEL TESTING. DO YOU
13 RECALL THAT TESTIMONY?

14 A. YES.

15 Q. DID PARALLEL TESTING TAKE PLACE IN ANY COUNTIES
16 THIS YEAR AFTER THE ELECTION?

17 A. I ONLY KNOW ABOUT PENNSYLVANIA. I DON'T KNOW
18 ABOUT OTHER STATES.

19 Q. MY QUESTION IS ABOUT PENNSYLVANIA.

20 A. YES. IT TOOK PLACE IN ALLEGHENY COUNTY.

21 Q. WHAT OTHER COUNTIES?

22 A. I DON'T KNOW OF ANY OTHERS.

23 Q. IS IT REQUIRED TO TAKE PLACE STATE-WIDE?

24 A. NO.

25 Q. WAS IT REQUIRED TO TAKE PLACE IN ALLEGHENY

1 COUNTY?

2 A. WELL, IT DEPENDS ON WHAT YOU MEAN BY REQUIRED.

3 Q. IS THERE A STATE LAW REQUIRING THAT IT TAKE
4 PLACE?

5 A. YOU MEAN SEPARATELY IN ALLEGHENY COUNTY FROM THE
6 OTHER COUNTIES IN THE STATE?

7 Q. CORRECT.

8 A. NO.

9 Q. SO THERE IS NO STATE LAW REQUIRING PARALLEL
10 TESTING TO TAKE PLACE?

11 A. THAT'S RIGHT.

12 Q. SO ISN'T IT TRUE THAT NOBODY THIS YEAR HAS DONE
13 A POST-ELECTION INSPECTION OF THE DATA AND THE CODE ON
14 THE MACHINES USED IN THIS ELECTION?

15 A. I DON'T KNOW THAT.

16 Q. IN PENNSYLVANIA?

17 A. I DON'T KNOW THAT. I WOULD NOT KNOW THAT.

18 Q. YOU WOULD NOT KNOW THAT BECAUSE IT'S NOT
19 SOMETHING THAT YOU PARTICIPATED IN, RIGHT?

20 A. I HAVEN'T, NO.

21 Q. YOU HAVE NOT HEARD OF ANYONE ELSE PARTICIPATING
22 IN SUCH -- IN SUCH A REVIEW?

23 A. NO.

24 MS. FRICK: THANK YOU. THAT IS ALL I
25 HAVE.

1 THE COURT: I WILL GIVE YOU, MR. MAAZEL,
2 AN EXTRA FIVE MINUTES.

3 MR. JOEL: I HAVE NO REDIRECT, YOUR
4 HONOR. I WAS UNDER THE IMPRESSION THAT THE CROSS WAS
5 COUNTING AGAINST THEIR TIME.

6 THE COURT: NO, NO. BUT I WILL GIVE YOU
7 -- YOU ASKED FOR FIVE MINUTES FOR REBUTTAL.

8 MR. JOEL: I HAVE NO REDIRECT.

9 THE COURT: DID YOU HAVE ANY OTHER
10 WITNESSES YOU WANTED TO CALL?

11 MR. JOEL: NO, NO.

12 THE COURT: VERY WELL. THANK YOU.

13 THE WITNESS: YOU ARE WELCOME, YOUR
14 HONOR.

15 THE COURT: BUT I WILL GIVE -- SO YOU ARE
16 OUT OF TIME AND I WILL GIVE MR. MAAZEL 20 MINUTES
17 INSTEAD OF 15, BECAUSE I'M GOING TO GIVE HIM AN EXTRA
18 FIVE MINUTES.

19 MR. TABAS.

20 THE WITNESS: YOUR HONOR, ARE THERE MORE
21 FACT WITNESSES, OR DO I HAVE TO GO OUTSIDE?

22 THE COURT: DO YOU INTEND TO RECALL THIS
23 WITNESS?

24 MR. JOEL: NO, I DON'T, YOUR HONOR.

25 THE COURT: YOU DON'T HAVE TO GO OUTSIDE.

1 MR. TABAS: GOOD AFTERNOON, YOUR HONOR.

2 THE COURT: GOOD AFTERNOON.

3 MR. TABAS: I'M HERE ON BEHALF OF THE
4 INTERVENORS WHICH INCLUDE THE PRESIDENT ELECT, THE
5 VICE-PRESIDENT ELECT OF THE UNITED STATES AND THE
6 ELECTORS THAT WERE PLEDGED TO THEM AS PART OF THE
7 ELECTION THAT WAS HELD ON NOVEMBER 8TH.

8 YOUR HONOR, I WILL, IN MY ARGUMENT, BE
9 REFERRING TO SOME CASES THAT WE DID NOT CITE IN OUR
10 BRIEF BECAUSE OF A DECISION THAT CAME DOWN YESTERDAY IN
11 THE MICHIGAN FEDERAL COURT RELATING TO A CASE BROUGHT
12 ALSO BY PLAINTIFF STEIN THAT IS RELEVANT TO TODAY. SO I
13 HAVE GIVEN COPIES OF THOSE CASES TO COUNSEL FOR MS.
14 STEIN AND TO THE STATE. I HAVE A PACKAGE OF THEM FOR
15 THE COURT AS WELL, IF I CAN GIVE THEM TO THE COURT
16 REPORTER.

17 THE COURT: ACTUALLY JUST GIVE THEM TO MY
18 DEPUTY, PLEASE. THANK YOU.

19 MR. TABAS: YOUR HONOR, JUST ALSO BEFORE
20 I GET INTO MY ARGUMENT, I HAVE A COUPLE OF HOUSEKEEPING
21 MATTERS IN RESPONSE TO THE ISSUES THAT WERE MENTIONED BY
22 MR. MAAZEL DURING HIS PRESENTATION. HE REFERRED TO THE
23 SITUATION IN MONTGOMERY COUNTY AND MADE REFERENCE TO A
24 FACT THAT THERE WERE 4,000 PLUS VOTERS WHO DID NOT VOTE
25 AT ALL. OF COURSE, HE HAD NO WITNESSES OR ANYTHING TO

1 ESTABLISH THAT. I DID NOT CHALLENGE IT AT THE TIME
2 BECAUSE I DIDN'T THINK IT WAS NECESSARY TO, BUT THE
3 REASON I DID NOT, YOUR HONOR, IS BECAUSE MR. MAAZEL HAS
4 NOT FURTHER PURSUED WHAT HE SHOULD HAVE AND INQUIRED AS
5 TO WHAT THAT TERM NO VOTES MEANS IN MONTGOMERY COUNTY
6 AND THE OTHER 66 COUNTIES IN PENNSYLVANIA. THAT IS
7 SIMPLY THE REFERENCE TO THE NUMBER OF UNDER VOTES THAT
8 WERE CAST ON A MACHINE. IT MAY SAY NO VOTES, BUT IF HE
9 HAD INQUIRED, HE WOULD HAVE FOUND OUT THAT IT'S UNDER
10 VOTES.

11 THE COURT: I'M SORRY. IT HAS BEEN A
12 LONG TIME SINCE 2000. WHAT IS AN UNDER VOTE?

13 MR. TABAS: AN UNDER VOTE IS LET'S SAY
14 YOU CAN VOTE FOR FIVE PEOPLE --

15 THE COURT: IF SOMEBODY DOES NOT CAST A
16 VOTE FOR EVERY OFFICE, EVERY OFFICE FOR WHICH A PERSON
17 MAY VOTE. SO IF THERE ARE FIVE ROW OFFICES, AND THE
18 PERSON VOTES FOR ONLY FOUR, THAT IS AN UNDER VOTE?

19 MR. TABAS: THAT WOULD BE AN UNDER VOTE,
20 THE SAME AS IF, LET'S SAY YOU DID NOT CAST A VOTE FOR
21 THE ATTORNEY GENERAL'S OFFICE AT ALL, THAT WOULD BE AN
22 UNDER VOTE. AND THEN THERE IS SUCH A THING AS AN OVER
23 VOTE BUT THAT IS WHEN YOU VOTE FOR TOO MANY PEOPLE. BUT
24 THAT IS A DIFFERENT ISSUE.

25 THE COURT: OKAY.

1 MR. TABAS: IN ADDITION, MR. MAAZEL SAID
2 THAT THERE WERE SEVERAL, MAYBE AS MANY AS SIX RECOUNTS
3 STILL PENDING IN PENNSYLVANIA. FROM PERSONAL KNOWLEDGE,
4 BECAUSE THAT IS ALL I HAVE BEEN INVOLVED WITH SINCE
5 NOVEMBER 8TH, THERE IS ONLY ONE THAT IS CURRENTLY
6 PENDING. 64 OF OUR COUNTIES HAVE CERTIFIED THE RESULTS,
7 I HAVE CONFIRMED WITH THE DEPARTMENT OF STATE YESTERDAY.
8 ONE WILL CERTIFY TOMORROW AT 11:00 AM. THE REMAINING
9 TWO WILL CERTIFY ON MONDAY.

10 THE COURT: I DON'T THINK WHAT THE TWO OF
11 YOU ARE SAYING IS AT ALL INCONSISTENT. WHY DON'T YOU GO
12 ON?

13 MR. TABAS: THANKS.

14 THEN I WOULD LIKE TO ADDRESS ONE OF THE
15 POINTS THAT MR. MAAZEL HAS MADE AS PART OF HIS ARGUMENT,
16 PART OF HIS SEVEN REASONS FOR WHY THIS COURT SHOULD
17 GRANT THE EXTRAORDINARY RELIEF REQUESTED.

18 AND HE TALKS ABOUT THE FACT THAT THE
19 RULES FOR RECOUNTS, ELECTION CONTESTS ARE CONFUSING,
20 THEY'RE UNKNOWN, THEY'RE ARBITRARY HE SAID TODAY. HE
21 REFERRED TO ACTUALLY INTERESTINGLY ENOUGH PROBLEMS WITH
22 THE PROTHONOTARY, WHICH IS NOT ONLY DIFFICULT TO
23 PRONOUNCE, BUT SOMETIMES VERY DIFFICULT TO SPELL AS
24 WELL. BUT MR. MAAZEL SHOULD BECOME FAMILIAR AND I WOULD
25 ASK THE COURT TO TAKE -- TO REVIEW THE DECISION OF IN

1 RE: PHILADELPHIA DEMOCRATIC MAYORALTY PRIMARY ELECTION
2 CONTEST FROM BACK IN 1979. IT'S IN THE PACKAGE THAT I
3 PROVIDED TO THE COURT. INTERESTINGLY ENOUGH, MR. HARVEY
4 WAS COUNSEL FOR ONE OF THE PARTIES IN THAT CASE AND
5 ACTUALLY IN THE SAME ROLE THAT I AM TODAY, OPPOSING
6 EFFORTS IN AN ELECTION CONTEST MATTER. IN THAT DECISION
7 -- IT WAS A COMMON PLEAS COURT DECISION BUT IT CITED A
8 VERY WELL-KNOWN, A VERY HIGHLY REGARDED STATE SUPREME
9 COURT DECISION, MADIGAN APPEAL DEALING WITH SUCH ISSUES
10 AS RECOUNTS IN ELECTION CONTESTS. IN THAT CASE, IN THE
11 DEMOCRATIC MAYORAL CASE, THE PARTIES SEEKING TO
12 CHALLENGE THE ELECTION GOT MISINFORMATION FROM A
13 PROTHONOTARY AND MADE MISTAKES AND FILED INCORRECTLY THE
14 CHALLENGES TO THE ELECTION CONTEST.

15 THE COURT SAID THAT COUNSEL FOR
16 PETITIONERS CANNOT BE PERMITTED TO RELY ON
17 MISINFORMATION FROM THE PROTHONOTARY'S OFFICE WHEN A
18 READING OF THE STATUTE WOULD HAVE SUPPLIED COUNSEL WITH
19 THE CORRECT INFORMATION. THE COURT WENT ON TO SAY THAT
20 WHERE THERE IS A STATUTE WHICH DOES SET FORTH IN CLEAR
21 AND CONCISE TERMS THE REQUIREMENTS FOR PROCEEDING,
22 COUNSEL'S RELIANCE UPON MISINFORMATION FROM THE
23 PROTHONOTARY CANNOT JUSTIFY HER FAILURE TO PROPERLY FILE
24 HER CHALLENGE. AND IF COUNSEL HAD DONE THE RESEARCH AND
25 HAD REVIEWED THE CASE LAW AND HAD ACTUALLY REVIEWED THE

1 VARIOUS STATUTORY PROVISIONS, THEY WOULD HAVE SEEN THAT
2 THERE WAS A VERY CLEAR PROCESS IN PENNSYLVANIA FOR DOING
3 RECOUNTS, RECANVASSES AND ELECTION CONTESTS. IT'S NOT
4 REALLY 67 SEPARATE ONES. THE PROVISIONS IN THE ELECTION
5 CODE APPLY TO ALL 67 OF THE COUNTIES.

6 SO NOW, YOUR HONOR, I GO INTO A FEW
7 BROADER POINTS. JILL STEIN, WHO IS ONE OF THE TWO
8 PLAINTIFFS HERE TODAY, WHO GARNERED LESS THAN 1 PERCENT
9 OF THE VOTES CAST OF ABOUT 6 MILLION IN PENNSYLVANIA, IS
10 SEEKING, AS THEY HAVE SAID TODAY, NOT ONLY A RECOUNT IN
11 MANY COUNTIES, BUT THEY ARE ALSO SEEKING THIS FORENSIC
12 EXAMINATION. TO BE HONEST, YOUR HONOR, WE BELIEVE THE
13 HEART OF THE PLAINTIFF'S MOTIVE IN REALLY BRINGING THIS
14 CASE, AND ALL THE POST-ELECTION CASES THAT THEY BROUGHT
15 THESE LAST FEW WEEKS, IS A COMMENT THEY MADE ON PAGE 2
16 OF THEIR MEMORANDUM OF LAW, QUOTE: A MAJORITY OF THE
17 MACHINES VOTED FOR DONALD TRUMP IN PENNSYLVANIA, END OF
18 QUOTE.

19 THEIR DISAPPOINTMENT IN THAT REALITY IS
20 WHAT IS DRIVING THEIR UNSUBSTANTIATED CLAIMS IN AN
21 EFFORT TO DELAY THE ELECTORAL COLLEGE WHICH MUST MEET ON
22 DECEMBER 19TH OF THIS YEAR TO CAST ITS BALLOTS.

23 THE COURT: IF PENNSYLVANIA'S VOTE IS NOT
24 CERTIFIED BY DECEMBER 13TH, WHAT HAPPENS?

25 MR. TABAS: IF IT IS NOT, THERE IS A

1 GREAT RISK THAT THE MATTER WILL THEN FLOW EITHER TO THE
2 LEGISLATURE OF PENNSYLVANIA, WHO MAY HAVE TO SELECT
3 ELECTORS FOR THE STATE OF PENNSYLVANIA. BUT ALL OF THE
4 PEOPLE IN PENNSYLVANIA, THE MILLIONS OF VOTERS WHO DID
5 VOTE FOR THE 20 ELECTORS FOR THE PRESIDENT ELECT AND
6 VICE-PRESIDENT ELECT WILL HAVE BEEN COMPLETELY
7 DISENFRANCHISED BY THAT. THAT IS WHAT BUSH VERSUS GORE
8 RECOGNIZED. THAT IS WHERE AT LEAST FIVE OF THE JUSTICES
9 STATED THAT ALL STATE PROCEDURES DEALING WITH CHALLENGES
10 TO AN ELECTION FOR A STATE THAT HAS OPTED INTO THE
11 FEDERAL SAFE HARBOR UNDER 3 U.S.C. SECTION 5, AND
12 PENNSYLVANIA HAS OPTED IN, MUST CEASE. IN THAT YEAR, IT
13 WAS DECEMBER 12TH. THIS YEAR IT'S DECEMBER 13TH. IT
14 MUST CEASE. THAT IS BINDING PRECEDENT OF THE UNITED
15 STATES SUPREME COURT.

16 THE COURT: IF -- HOW LONG WOULD A
17 STATEWIDE RECOUNT TAKE, 67 COUNTIES TAKE?

18 MR. TABAS: WELL, HAVING BEEN INVOLVED IN
19 ONE FOR THE CURRENT PRESIDENT JUDGE OF THE SUPERIOR
20 COURT, WHICH WE WON, IT TOOK -- IT WAS DECEMBER 30TH, I
21 BELIEVE. MR. HARVEY WAS ALSO IN THAT MATTER. HE RAN
22 INTO FEDERAL COURT ALSO ON I THINK IT WAS THE 29TH --

23 THE COURT: HE KEEPS TURNING UP LIKE A
24 BAD PENNY.

25 MR. TABAS: HE WAS KEEPING ME BUSY RIGHT

1 THROUGH THE END OF THE YEAR.

2 THE COURT: I UNDERSTAND.

3 YET THE PLAINTIFFS ARE SAYING WHAT THEY
4 REALLY WANT IS A MUCH NARROWER SLICE THAN THAT. IT
5 WOULD TAKE ONLY A DAY.

6 MR. TABAS: YOUR HONOR, I HAVE DONE THIS.
7 I HAVE NOT DONE IT AS LONG AS MR. HARVEY, WHO'S PROBABLY
8 HAS BEEN DOING ELECTION LAW SINCE THE DAYS OF WILLIAM
9 PENN PROBABLY, BUT I HAVE DONE THIS FOR QUITE SOME TIME.
10 AND I'LL TELL YOU SOMETHING. THERE IS ONE THING THAT IS
11 CERTAIN, IT WILL NOT TAKE A DAY. AND FOR THEM TO EVEN
12 COME IN NOW, THEY HAVE HAD SO MANY SHIFTING CLAIMS AND
13 ARGUMENTS. THEY CREATED THE DELAY THAT PUT US HERE
14 TODAY. THIS ELECTION ENDED ON THE 8TH.

15 THE COURT: I HAVE NOT ASKED PLAINTIFFS
16 ABOUT THAT. I INTEND TO. WHY THEY WAITED UNTIL THE
17 LAST DAY UNDER THE LAW TO RAISE THEIR CHALLENGE, BUT GO
18 AHEAD.

19 MR. TABAS: THERE WERE MANY OPPORTUNITIES
20 FOR THEM TO DO OTHER THINGS PRIOR TO THE DATE THEY DID
21 FILE IT AND THE DATE THAT THEY GOT HERE.

22 JUST -- BRIEFLY, THE OTHER THING THAT I
23 WANT TO POINT OUT TO THE COURT IS, AFTER THEY FILED THE
24 COMPLAINT IN THIS COURT THIS MONDAY, THE PLAINTIFFS
25 THROUGH THE PARTIES THAT THEY HAVE CONTROLLED,

1 SUPERVISED, FINANCED, CORRALLED AND ENCOURAGED AND WITH
2 THE SAME ATTORNEYS THAT ARE SITTING HERE TODAY AND WITH
3 SIMILAR EXPERT WITNESSES, ALSO HAVE RAISED THE VERY SAME
4 ISSUES THAT ARE BEFORE YOUR HONOR IN THE PHILADELPHIA
5 COUNTY COURT OF COMMON PLEAS, ALLEGHENY COUNTY COURT OF
6 COMMON PLEAS, PREVIOUSLY ALSO IN MONTGOMERY COUNTY AS
7 WELL. IN THE DAYS BETWEEN MONDAY AND TODAY, THE
8 PHILADELPHIA COURT OF COMMON PLEAS JUST YESTERDAY TURNED
9 DOWN THEIR REQUEST FOR A FORENSIC EXAMINATION.

10 THE COURT: I READ JUDGE FLETMAN'S
11 OPINION.

12 MR. TABAS: THAT WAS TWO DAYS AGO. THAT
13 WAS MY FAULT. TWO DAYS AGO. YESTERDAY JUDGE JAMES IN
14 ALLEGHENY COUNTY, THE SAME THING, ISSUED AN ORDER
15 TURNING THEM DOWN, BOTH SAYING THERE IS NO RIGHT. THE
16 STATUTE, THE LEGISLATURE HAS PROVIDED FOR NO RIGHT OF A
17 FORENSIC EXAMINATION AS REQUESTED. SO EVEN WHILE THEY
18 ARE ASKING YOU FOR THAT, THEY ARE ALSO SIMULTANEOUSLY
19 ASKING THESE OTHER COURTS, THAT THE MONTGOMERY COUNTY
20 COURT TURNED THEM DOWN AS WELL, AND THEY RECENTLY
21 APPEALED THAT I BELIEVE YESTERDAY.

22 SO THEY ARE NOT ONLY FORUM SHOPPING.
23 THEY ARE FORUM AVOIDANCE.

24 THE COURT: ANY DECISION BY THE MICHIGAN
25 SUPREME COURT? CAN ANYBODY TELL ME?

1 MR. TABAS: YES. AND I DID -- WE GOT IT
2 IN TIME YESTERDAY THAT I COULD PUT IT INTO OUR BRIEF.
3 WHAT HAPPENED IS THE MICHIGAN COURT OF APPEALS, FEDERAL
4 COURT OF APPEALS.

5 THE COURT: I'M AWARE OF WHAT THE SIXTH
6 CIRCUIT HAS DONE. I'M AWARE OF WHAT THE MICHIGAN COURT
7 OF APPEALS HAS DONE. MY UNDERSTANDING WAS THERE WAS
8 REVIEW BEING SOUGHT IN THE MICHIGAN SUPREME COURT.
9 MR. MAAZEL IS NODDING. HAS THE MICHIGAN SUPREME COURT
10 ACTED YET?

11 MR. TABAS: TO THE BEST OF MY KNOWLEDGE,
12 NO. THE DISTRICT COURT THOUGH --

13 THE COURT: I UNDERSTAND WHAT THE
14 DISTRICT COURT DID.

15 MR. TABAS: YOU KNOW WHAT THEY DID.

16 THE COURT: I KNOW. I KNOW WHAT JUDGE
17 GOLDSMITH, I GUESS, DID.

18 I'M LOOKING AT PLAINTIFFS COUNSEL TABLE,
19 NO DECISION YET OUT OF MICHIGAN?

20 MR. MAAZEL: NOT THAT I'VE HEARD. AS OF
21 THE MOMENT I WALKED INTO THIS COURTROOM.

22 THE COURT: IF YOU GUYS DON'T KNOW, I'M
23 SATISFIED THAT THERE IS NO DECISION YET.

24 GO ON, MR. TABAS.

25 MR. TABAS: THANK YOU, YOUR HONOR.

1 CLEARLY, I THINK THAT IT GOES WITHOUT
2 QUESTION AND THE SECRETARY WHO UNFORTUNATELY DID NOT
3 HAVE A CHANCE TO DO MUCH OF AN ARGUMENT UNTIL THE END,
4 STATED ALSO CLEARLY IN HIS BRIEF, AS WE DID, THAT THERE
5 HAS BEEN A COMPLETE FAILURE TO ALLEGE ANY FACTS WHICH IF
6 PROVEN WOULD HAVE CHANGED THE OUTCOME OF THE ELECTION
7 CERTAINLY AS TO MS. STEIN, AND SHE CERTAINLY COULD HAVE
8 NO INTEREST IN CHANGING THE RESULTS FOR MS. CLINTON
9 BECAUSE SHE WAS RUNNING AGAINST MS. CLINTON.

10 BUT I WANT TO REFER -- THE MICHIGAN
11 FEDERAL COURT DECISION THAT DID COME DOWN RELEASING THE
12 TRO IS IMPORTANT BECAUSE THAT LEADS ME TO GO INTO A
13 BRIEF DESCRIPTION OF THE PENNSYLVANIA STATUTORY PROCESS
14 FOR THESE CHALLENGES THAT WERE AVAILABLE TO THE
15 PLAINTIFFS HERE IN THIS CASE. THE FACT OF THE MATTER IS
16 SHE CANNOT POINT TO ANY ACTS OF FRAUD, AS WE HAVE BEEN
17 SAYING THROUGHOUT THIS. BUT THE ENTIRE CLAIM THAT SHE
18 IS MAKING FOR RELIEF IN ALL OF HER PLEADINGS INCLUDING
19 THE PLEADINGS HERE, EVEN THOUGH THEY CITE THE
20 CONSTITUTIONAL PROVISION IS -- BASICALLY ONLY EMANATES
21 FROM STATE LAW. THERE IS NO CLAIM BY THE PLAINTIFFS,
22 ANYWHERE OTHER THAN THOSE PROVISIONS, THAT THERE IS ANY
23 STATUTORY FEDERAL RIGHT TO THE RELIEF THAT THEY ARE
24 SEEKING. AND THE MICHIGAN U.S. DISTRICT COURT IN THE
25 EASTERN DISTRICT YESTERDAY CONCLUDED THAT AS WELL.

1 BUT MORE IMPORTANTLY, THAT COURT IN THE
2 DECISION YESTERDAY WENT THROUGH THE ANALYSIS OF THE ROLE
3 OF THE STATE IN POST ELECTION CHALLENGES. IN CITING
4 BUSH VERSUS GORE, NUMBER ONE, THEY WENT THROUGH AND
5 ACKNOWLEDGED THAT THE SUPREME COURT STATED THAT THE
6 FEDERAL COURTS WILL NOT INTERFERE WITH THE PROCESS BY
7 WHICH THE CONSTITUTION HAS GIVEN TO THE LEGISLATURES OF
8 THE STATE THE POWER TO HANDLE THE ELECTION OF ELECTORS
9 TO THE ELECTORAL COLLEGE. THAT IS A CONSTITUTIONAL
10 RIGHT DELEGATED TO THE LEGISLATURE. OUR LEGISLATURE HAS
11 GONE THROUGH AND IN OUR STATUTE WE HAVE THE PROVISIONS
12 OF HOW THE ELECTORS ARE TO BE ELECTED TO THE ELECTORAL
13 COLLEGE. IN BUSH ONE, THE SUPREME COURT SAID THAT IS
14 NOT A PROCESS TO BE INTERFERED WITH BY THE FEDERAL
15 COURTS.

16 AND OUR PROCESS HAS BEEN IN PLACE FOR
17 QUITE SOME TIME, AND THERE IS A BASIC HISTORY OF CASE
18 LAW THAT SUPPORTS AND SETS FORTH CLEARLY WHAT MUST BE
19 DONE. I CITE IT IN REFERENCE TODAY THE MADIGAN CASE,
20 THE SUPREME COURT OF PENNSYLVANIA AND ALSO THE
21 PHILADELPHIA MAYORALTY ONE AND THEY CITE NUMEROUS CASES
22 AS WELL. THERE IS A QUITE CLEAR PROCESS THAT ANYONE CAN
23 FOLLOW IN ORDER TO GET POST ELECTION RELIEF.

24 AND IMPORTANTLY, ONE OF THE CASES THAT WE
25 CITED OF THE SUPREME COURT OF PENNSYLVANIA IN THE CASE

1 OF IN RE: JONES, THE REASON FOR ALL THIS IS, YOUR
2 HONOR, IS BECAUSE THERE IS A MAJOR PUBLIC POLICY REASON
3 WHY ELECTION CONTESTS HAVE TO BE DECIDED EXPEDITIOUSLY
4 BECAUSE OF THE ABILITY TO HAVE TRANSFER OF POWER, HAVE
5 GOVERNMENT CONTINUE AND TO BE EFFECTIVE IN THIS
6 PARTICULAR WAY.

7 I WANT TO ALSO MOVE ON BRIEFLY TO THE
8 ISSUE OF STANDING, YOUR HONOR. WE BELIEVE -- THE
9 INTERVENORS BELIEVE THAT THIS COURT LACKS JURISDICTION
10 OVER THIS CASE ENTIRELY BECAUSE THE PLAINTIFFS HAVE NO
11 STANDING. NOW I HAVE ARGUED SOME OTHER POINTS FIRST
12 BEFORE I GOT TO YOUR JURISDICTIONAL ONE, I APOLOGIZE,
13 BUT I THOUGHT THE BACKGROUND WOULD BE HELPFUL. STEIN
14 HERSELF HAS NOT BEEN ABLE TO ASSERT, NOR CAN YOU FIND IT
15 IN ANY ONE OF HER PLEADINGS ANYWHERE, ANY ACTUAL INJURY
16 OR EVEN AN IDENTIFIABLE POTENTIAL HARM. SHE HAS TO,
17 UNDER THE STANDARD OF WITTMAN -- AND I'M GOING TO HAVE
18 TROUBLE PRONOUNCING THE DEFENDANT IN WITTMAN,
19 PERSONHUBALLAH, WHATEVER, BUT WE HAVE CITED IT.

20 UNDER THAT DECISION OF THE U.S. SUPREME
21 COURT, SHE HAS TO BE ABLE TO PROVE THAT SHE HAS AN
22 INJURY TRACEABLE TO THE CONDUCT LIKELY TO BE ADDRESSED
23 BY A FAVORABLE OUTCOME. SHE HAS NONE. SHE HAS NOT
24 ASSERTED ONE. THEREFORE SHE HAS NO INJURY FOR WHICH SHE
25 CAN HAVE STANDING. AND NOTABLY NOWHERE IN ANY OF HER

1 PLEADINGS DID STEIN SAY SHE WILL WIN OR MIGHT WIN. IN
2 FACT, SHE HAS THIS GENERAL ALLEGATION OF MAYBE DOING
3 GOOD TO FIND OUT WHO DID THE VOTERS REALLY VOTE FOR.
4 AND ALSO AS THE SUPREME COURT OF THE UNITED STATES HELD
5 IN LUJAN VERSUS THE DEFENDERS OF WILDLIFE CASE, WHICH WE
6 CITED, THAT YOU CANNOT SIMPLY COME IN AND HAVE STANDING
7 BECAUSE YOU HAVE A GENERALLY AVAILABLE GRIEVANCE ABOUT
8 GOVERNMENT. I THINK IT'S PROBABLY COMMON THAT MANY
9 PEOPLE HAVE SUCH A GRIEVANCE. BUT YOU HAVE TO SHOW HARM
10 TO YOURSELF OR THE LIKELIHOOD OF THAT.

11 NOW WRIGHTS, HE HAS ABSOLUTELY NO
12 STANDING BECAUSE HE HAS PLEADED NO FACTS WHATSOEVER THAT
13 WOULD SHOW THAT HIS VOTE WAS NOT COUNTED.

14 SO ON THAT BASIS, YOUR HONOR, THE LACK OF
15 STANDING I WOULD SUGGEST TO THIS COURT DEPRIVES THIS
16 COURT OF JURISDICTION OVER THIS MATTER, AND IT SHOULD BE
17 -- PRELIMINARY INJUNCTION SHOULD BE CERTAINLY DENIED FOR
18 THAT BASIS AND I WOULD ALSO ASK THAT THE CASE BE
19 DISMISSED AS WELL.

20 THE PLAINTIFFS CLEARLY, YOUR HONOR, DO
21 NOT MEET THE STANDARDS FOR A PRELIMINARY INJUNCTION.
22 AND I'M NOT HERE ON THE MOTION BY THE WAY FOR -- TO
23 DISMISS. I'M ONLY IN A RESPONSE TO THE PI. THERE IS NO
24 LIKELIHOOD OF SUCCESS ON THE MERITS. I THINK THEIR
25 STRONGEST ARGUMENT THEY BELIEVE THEY COULD HAVE MADE WAS

1 ASKS FOR A CONTINUANCE AND IN THE CONTINUANCE FURTHER
2 ADMITTED THAT THERE WAS NO EVIDENCE FOR THE CLAIM. THAT
3 IS WHY THEY NEEDED IT.

4 NOW LET ME GET QUICKLY TO THE TIMELINE
5 BECAUSE I BELIEVE THAT THERE HAS BEEN COMPLETELY
6 UNREASONABLE DELAY HERE, WHICH WOULD BE GROUNDS TO DENY
7 THE PRELIMINARY INJUNCTION. I MENTIONED THAT ON
8 NOVEMBER 8TH WAS THE ELECTION. BETWEEN NOVEMBER 9TH AND
9 THE 13TH THEY TOOK NO STEPS WHATSOEVER TO ASSERT ANY
10 CLAIMS THAT THEY COULD HAVE HAD UNDER THE ELECTION CODE.
11 IN FACT THEY TOOK NO STEPS THAT THEY COULD HAVE TAKEN
12 PRIOR TO THE ELECTION. THERE ARE AT LEAST THREE
13 PROVISIONS UNDER THE ELECTION CODE FOR STEPS THAT A
14 CANDIDATE AND POLITICAL PARTIES CAN TAKE TO EXAMINE
15 VOTING MACHINES AND TO RAISE ALL OF THESE ISSUES. THEY
16 HAVE NEVER DONE ANY OF THAT.

17 THEIR EXPERT AND THEY ADMIT THAT THEY
18 HAVE KNOWN ABOUT THESE PROBLEMS FOR YEARS, BUT THEY
19 WAITED UNTIL THIS LAST MINUTE NOW TO DO IT. ON
20 NOVEMBER 14TH BY LAW IN PENNSYLVANIA, THE OFFICIAL
21 COMPUTATION OF THE BALLOTS AND THE VOTES TAKE PLACE, IN
22 ALL 67 COUNTIES. DID NOT RAISE ANY CONCERNS THROUGHOUT
23 THAT WHOLE PROCESS THAT IS OPEN TO THE PUBLIC, TO WHICH
24 THEY ARE ALLOWED TO HAVE WATCHERS PRESENT. EVEN
25 LAWYERS, THEY COULD EVEN -- IT'S A GOOD THING FOR

1 LAWYERS. THEY CAN MAKE A LIVING. THEY COULD GO DOWN
2 AND WATCH IT. DID NONE OF THAT.

3 THEN, ON NOVEMBER 28TH, THE LAST POSSIBLE
4 DAY TO FILE ELECTION CONTEST, THEY FILED ONE. IT'S TWO
5 PAGES. TWO PAGES. THERE WAS A THIRD PAGE. IT WAS
6 BASICALLY A SIGNATURE LINE AND SO FORTH OF LEARNED
7 COUNSEL. THE ELECTION CONTEST DID NOT EVEN RAISE ANY
8 CONSTITUTIONAL CLAIM WHATSOEVER. IT CONTAINED NO
9 EVIDENCE OF ACTING. IN FACT, THEY WENT ON AND BASICALLY
10 ADMITTED IN THE ELECTION CONTEST THAT IT WAS A PLACE
11 HOLDER. THEY SAID HERE WE ARE JUST FILING BECAUSE OF
12 THE DEADLINE AND WE ARE IN SEARCH OF EVIDENCE, A FISHING
13 EXPEDITION, AS THE STATE HAD SAID. BUT THAT IS
14 COMPLETELY IN VIOLATION OF THE STATUTORY REQUIREMENTS OF
15 THE ELECTION CODE UNDER 3456, 3457, 3458.

16 NOVEMBER 29TH, THE COMMONWEALTH COURT
17 PROMPTLY SCHEDULED HEARINGS IN THAT MATTER. NEXT TWO
18 DAYS LATER THEY ASKED FOR A CONTINUANCE OF THREE DAYS.
19 THE COURT EVEN GAVE THEM A PARTIAL CONTINUANCE AND SAID,
20 FINE, ON DECEMBER 5TH, MONDAY THE 5TH, YOU WILL HAVE
21 ORAL ARGUMENT. HERE ARE SOME ISSUES I WANT YOU TO
22 ADDRESS. I WILL GIVE YOU TO THE 8TH OF DECEMBER TO PUT
23 ON YOUR EVIDENCE, WHICH WOULD HAVE BEEN TODAY, YOUR
24 HONOR.

25 WHAT DID THEY DO? BY THE WAY, THE COURT

1 EVEN WENT A COUPLE OF STEPS FURTHER. THEY ALSO SET THE
2 BOND AT A MILLION DOLLARS, THAT'S CORRECT. BUT THE
3 COURT MADE IT CLEAR IN THE ORDER. ANY OF THE PARTIES
4 CAN GO INTO THE COURT AND SEEK THE RIGHT TO MODIFY IT
5 UPON GOOD CAUSE SHOWN. THEY DID NOT DO THAT, BUT THE
6 COURT DID SOMETHING UNUSUAL. THEY KEPT THE COMMONWEALTH
7 COURT E-FILE SYSTEM OPEN THROUGH THE WEEKEND, DIRECTED
8 THE CHIEF CLERK TO GIVE US HIS E-MAIL AND PHONE NUMBER
9 SO THAT IF WE WANTED TO FILE PLEADINGS ON THOSE ISSUES
10 OVER THE WEEKEND, THEY COULD BE ACCEPTED AND DISTRIBUTED
11 TO THE PARTIES. NOW, I WILL TELL YOU THEY DID FILE
12 SOMETHING. ON SATURDAY NIGHT AT 5 PM THEY FILED TO
13 WITHDRAW, AND THE COURT CLOSED THE CASE.

14 THEY HAD A PRESS CONFERENCE ON SUNDAY THE
15 6TH SAYING THEY WERE GOING TO COME IN AND VISIT YOUR
16 HONOR AND FILE A COMPLAINT, WHICH THEY DID THIS PAST
17 MONDAY.

18 THE COURT: SUNDAY WAS NOT THE 6TH. THE
19 4TH.

20 MR. TABAS: THE 4TH. THE DAYS HAVE BEEN
21 FLYING BY, YOUR HONOR.

22 SO NOW WE HAVE GOTTEN TO THIS WHOLE
23 PROCESS, AND HERE WE ARE TODAY, ON THE EVE OF THE
24 FEDERAL SAFE HARBOR DEADLINE. THE BUSH VERSUS GORE, THE
25 MAJORITY CLEARLY SAID ALL PROCESSES HAVE TO END, AND

1 THEY ARE ABOUT TO END; AS THEY SAID THERE IS ONE LEFT,
2 IT WILL FINISH THIS WEEKEND, ALL CERTIFICATIONS WILL BE
3 IN.

4 THIS IS A VERY CLEAR AND SEVERE DELAY
5 WHICH FEDERAL COURTS HAVE ROUTINELY RECOGNIZED IS THE
6 BASIS FOR DENYING PRELIMINARY INJUNCTIONS. IN FACT,
7 THIS VERY COURT SAID NOT TOO LONG AGO THAT IN THE CASE
8 OF THE PENNSYLVANIA DEMOCRATIC PARTY VERSUS THE
9 REPUBLICAN PARTY AND MR. TRUMP, ET AL: DILATORY CONDUCT
10 WEIGHS DECIDEDLY AGAINST GRANTING THE EXTRAORDINARY
11 RELIEF IT SEEKS ESPECIALLY WHERE HERE THERE IS AN
12 ELECTION LOOMING. THAT WAS THE DAY BEFORE.

13 THIS COURT SAID THAT AN UNREASONABLE
14 DELAY IS BASIS FOR DENYING INJUNCTIVE RELIEF, DELAY
15 KNOCKS THE BOTTOM OUT OF ANY CLAIM OF THE IMMEDIATE AND
16 IRREPARABLE INJURY. YOUR HONOR, I THOUGHT THAT WAS WELL
17 PUT.

18 THE COURT: THANK YOU.

19 MR. TABAS: THAT IS WHERE WE ARE HERE
20 TODAY. THEN FINALLY, YOUR HONOR, I WILL CONCLUDE, THE
21 SAFE HARBOR, I JUST WANT TO GO BACK TO THAT AGAIN. THIS
22 IS THE MOST CRITICAL PART.

23 PENNSYLVANIA MUST CERTIFY THE ELECTORS BY
24 DECEMBER 13TH. IN FACT, IT WOULD BE BEST IF THEY WERE
25 ALL CERTIFIED ON THE 12TH TO THE SECRETARY OF THE

1 COMMONWEALTH WHO HAS TO PRESENT THE RESULTS TO THE
2 GOVERNOR. THE GOVERNOR ACTUALLY IS IN CHARGE OF
3 CERTIFYING THE ELECTORS. THIS IS UNDER 3 U.S.C. SECTION
4 5. THE ELECTORS MUST MEET BY LAW, BY FEDERAL LAW BY
5 DECEMBER 19TH TO CAST THEIR BALLOT. PENNSYLVANIA AS I
6 SAID PARTICIPATES IN THE SAFE HARBOR. JUST A QUICK
7 REVIEW OF EVEN TITLE 25 SECTION 3191 TO 3194. IT'S BEEN
8 IN PLACE FOR YEARS. SO HERE WE ARE, ONE BUSINESS DAY,
9 TWO BUSINESS DAYS BEFORE THE DEADLINE, THE HARM TO THE
10 INTERVENORS IS IRREPARABLE BECAUSE THE FAILURE TO
11 CERTIFY WILL DISENFRANCHISE ALL OF THOSE VOTERS IN
12 PENNSYLVANIA WHO HAVE VOTED FOR THOSE ELECTORS.

13 THERE HAVE BEEN NO PERCEPTIBLE CHANGE IN
14 THOSE FEW COUNTIES WHERE THERE HAVE BEEN SOME RECOUNTS
15 AND RECANVASSES. BUSH VERSUS GORE, AND I WILL END ON
16 THIS, HAS SAID QUITE CLEARLY, THAT ANY CONTROVERSY
17 LEADING TO CONCLUSIVE SELECTION OF ELECTORS MUST END,
18 AND THAT YEAR IT WAS DECEMBER 12TH. THE SUPREME COURT
19 SAID, AND THIS WAS THE MAJORITY, THIS WAS BUSH TWO, THAT
20 STATUTE, REFERRING TO 3 U.S.C. SECTION 5, IN TURN
21 REQUIRES THAT ANY CONTROVERSY OR CONTEST THAT IS
22 DESIGNED TO LEAD TO A CONCLUSIVE SELECTION OF ELECTORS
23 TO BE COMPLETED BY DECEMBER 12TH, WHICH THIS YEAR WOULD
24 BE THE 13TH.

25 SO FOR THOSE REASONS WE WOULD ASK THAT

1 THE COURT DENY THE REQUEST FOR PRELIMINARY INJUNCTION IN
2 THIS MATTER. THANK YOU, YOUR HONOR.

3 THE COURT: THANK YOU.

4 MR. MAAZEL.

5 MR. MAAZEL: YOUR HONOR, I THINK I MAY
6 STAND AT THE PODIUM.

7 THE COURT: THAT IS FINE.

8 MR. MAAZEL: I THINK ONE THING THAT IS
9 INTERESTING ABOUT TODAY'S ARGUMENT IS ACTUALLY HOW
10 LITTLE IS IN DISPUTE.

11 IF WE GO TO THE SEVEN BURDENS THAT WE
12 HAVE DISCUSSED EARLIER. THE FIRST QUESTION OF --

13 THE COURT: IF YOU DON'T MIND. WHY DON'T
14 YOU ADDRESS TIMELINESS FIRST.

15 WHY DID YOU WAIT UNTIL NOVEMBER 28TH?

16 MR. MAAZEL: SURE. SO THERE ARE A NUMBER
17 OF REASONS, YOUR HONOR.

18 THE FIRST IS THAT FOR VOTERS TO GO
19 THROUGH THIS PENNSYLVANIA PROCESS THE VOTERS HAVE TO DO
20 IT. IT'S A HUGE GRASSROOTS MOVEMENT. I MEAN THERE ARE
21 OVER 1300 PEOPLE WHO MOBILIZED AND WHO WENT TO SEEK
22 THESE PETITIONS. THAT HAD TO HAPPEN FIRST REALLY BEFORE
23 JILL STEIN COULD COME TO FEDERAL COURT BECAUSE WE HAD TO
24 DO OUR BEST TO WORK THROUGH THE STATE --

25 THE COURT: I DID NOT ASK YOU WHY YOU

1 FILED HERE ON DECEMBER 5TH, I ASKED WHY, IF INDEED YOU
2 FILED A PLACEHOLDER ON NOVEMBER 28TH, WHY DIDN'T YOU
3 FILE A PLACEHOLDER ON NOVEMBER 9TH?

4 MR. MAAZEL: WELL, I MEAN, THE PROBLEM
5 WITH THE WHOLE PLACEHOLDER ISSUE IS THAT THE STATES
6 ACTUALLY REQUIRES US TO FILE AS SOON AS WE DID. WE
7 FILED ON THE LAST DAY BECAUSE WE HAD TO.

8 THE COURT: I UNDERSTAND THAT BUT YOU ARE
9 NOT ONLY ASKING FOR AN EMERGENCY INJUNCTION, ALTHOUGH NO
10 ONE HAS POINTED IT OUT, YOU ARE ASKING FOR A MANDATORY
11 INJUNCTION, WHICH IS EVEN HARDER TO GET, AND ONE COULD
12 SAY THAT YOU, NOT YOU PERSONALLY BUT YOU, SAT ON YOUR
13 RIGHTS FOR SOME THREE WEEKS NECESSITATING WHAT JUDGE
14 PAPPERT CALLS, IN RULING AGAINST A SIMILAR TACTIC BY THE
15 STATE REPUBLICAN PARTY, A JUDICIAL FIRE DRILL.

16 I HAVE WORKED ON NOTHING ELSE SINCE I GOT
17 THIS ON DECEMBER 5TH, AND I WILL BE LUCKY TO GET MY
18 OPINION OUT AND GIVE EVERYBODY THE CHANCE TO BE HEARD ON
19 DECEMBER 12TH. HAD YOU FILED TWO OR THREE WEEKS
20 EARLIER, NONE OF THAT WOULD HAVE BEEN NECESSARY AND IT
21 WOULD ALSO SUGGEST, CONFIRM THE IDEA OF A REAL EMERGENCY
22 WARRANTING THE ISSUANCE OF A MANDATORY INJUNCTION.

23 MR. MAAZEL: HERE I THINK, YOUR HONOR, IS
24 THE KEY DIFFERENCE. I BELIEVE IT WOULD HAVE BEEN
25 IRRESPONSIBLE THE DAY AFTER THE ELECTION TO FILE A

1 CONTEST BECAUSE USUALLY YOU ARE SUPPOSED TO FILE A
2 CONTEST OF A CERTIFIED ELECTION. THERE HAS TO BE
3 SOMETHING --

4 THE COURT: WHY DID YOU WAIT TWO WEEKS
5 AFTER THE CERTIFICATION? THE ELECTION WAS CERTIFIED ON
6 NOVEMBER 14TH.

7 MR. MAAZEL: IT WAS -- IT SHOULD HAVE
8 BEEN BUT IT HAS NOT BEEN. TO THIS DAY, THE ELECTION HAS
9 NOT BEEN CERTIFIED BECAUSE COUNTIES HAVE BEEN COUNTING A
10 LOT SLOWER THAN THEY ARE REQUIRED TO UNDER PENNSYLVANIA
11 LAW SO WE WERE PUT IN THIS VERY ODD POSITION OF HAVING
12 TO FILE A CONTEST EVEN ON THE LAST DAY. WHEN I SAY "WE"
13 I MEAN THE VOTERS OF PENNSYLVANIA. EVEN BEFORE THERE
14 REALLY WAS AN ELECTION TO CONTEST AND THAT IS PART OF
15 OUR ARGUMENT TODAY, IS THAT THIS STATUTE PUTS VOTERS AND
16 CANDIDATES IN AN IMPOSSIBLE SITUATION.

17 THE COURT: WOULD YOU AGREE WITH ME THAT
18 PRECLUDING PENNSYLVANIA FROM COMPLYING WITH THE
19 DECEMBER 13TH CERTIFICATION WOULD DISENFRANCHISE ALL OF
20 PENNSYLVANIA'S VOTERS?

21 MR. MAAZEL: AND THAT IS CERTAINLY NOT
22 OUR INTENT.

23 THE COURT: BUT ISN'T THAT SOMETHING THAT
24 I HAVE TO THINK ABOUT IN BALANCING THE EQUITIES?

25 MR. MAAZEL: WE CERTAINLY HAVE TO

1 CONSIDER TIMING, I APPRECIATE THAT POINT, YOUR HONOR.

2 THE COURT: HERE IT'S DISENFRANCHISEMENT?

3 MR. MAAZEL: WHICH IS RELATED TO TIMING,
4 I AGREE WITH YOUR HONOR.

5 THE COURT: HAD YOU FILED A WEEK OR TWO
6 EARLIER, NONE OF THIS WOULD HAVE BEEN NECESSARY. MY
7 CLERKS WOULD REMEMBER WHAT THEIR APARTMENTS LOOK LIKE
8 AND WHAT IT IS LIKE TO SLEEP. ALL OF THIS COULD HAVE
9 BEEN DONE AT A MUCH SANER PACE.

10 MR. MAAZEL: WELL, I CERTAINLY HAVE
11 SOMETHING IN COMMON WITH YOUR CLERKS, YOUR HONOR. I'M
12 AFRAID TO SAY AS DO ALL MY COLLEAGUES HERE, INCLUDING
13 MR. HARVEY.

14 THE COURT: ESPECIALLY MR. HARVEY.

15 MR. MAAZEL: LOOK, TO COME TO FEDERAL
16 COURT I THINK WAS VERY IMPORTANT FOR US TO HAVE A RECORD
17 OF WHAT HAPPENED IN THE STATE COURT, AND VOTERS DID
18 THEIR ABSOLUTE BEST TO WORK WITHIN THE STATE SYSTEM.
19 THEY WORKED WITHIN THE ELECTION CODE. THEY TRIED TO
20 FILE THESE PETITIONS. THEY -- YOU KNOW, IN 16 COUNTIES,
21 OVER 1300 PEOPLE. I THINK OVER 375 PETITIONS. THIS WAS
22 AN INCREDIBLE AMOUNT OF WORK AND WHEN IT BECAME CLEAR
23 THAT THERE IS ABSOLUTELY NOTHING THAT VOTERS --

24 THE COURT: THIS IS NOT THE FIRST
25 CHALLENGE TO AN ELECTION THAT HAS EVER BEEN FILED IN

1 PENNSYLVANIA. AND THEY ARE GENERALLY FILED BEFORE THE
2 LAST DAY, EVEN IN STATEWIDE ELECTIONS, EVEN IN STATEWIDE
3 ELECTIONS WHERE, IN YOUR VIEW, ALL 67 COUNTIES DO THINGS
4 DIFFERENTLY. BUT HERE WHERE WE HAVE A COLD, HARD
5 PROVISION THAT WILL DISENFRANCHISE 6 MILLION PEOPLE,
6 YOUR CLIENTS WAITED UNTIL NOVEMBER 28TH TO PROCEED,
7 MAKING IT ALMOST IMPOSSIBLE TO COMPLY EVEN IF YOU HAD
8 GOTTEN THE RELIEF YOU WANTED FROM THE COMMONWEALTH
9 COURT, IT WOULD HAVE BEEN ALMOST IMPOSSIBLE TO COMPLY
10 WITH THE DECEMBER 13TH CUTOFF.

11 MR. MAAZEL: THIS IS, I THINK, A PROBLEM
12 REALLY CREATED -- I DON'T THINK IT IS CREATED BY THE
13 PLAINTIFFS IN THIS CASE. I THINK IT'S A PROBLEM CREATED
14 BY THE STATUTORY SCHEME IN PENNSYLVANIA, BECAUSE -- AND
15 THE REALITY OF ALL OF THESE COUNTIES COUNTING VOTES LONG
16 AFTER THEY SHOULD, AND SO THE IDEA THAT WE ARE SUPPOSED
17 TO -- THAT VOTERS GO INTO COURT.

18 THE COURT: I MEAN I ASKED YOUR EXPERT
19 WITNESS, IS THERE ANYTHING YOU HAVE TESTIFIED TO THAT
20 YOU DIDN'T KNOW BEFORE NOVEMBER 8TH? HE SAID, NO. I
21 HAVE LOOKED THROUGH EVERYTHING YOU HAVE SUBMITTED. ALL
22 OF THIS STUFF YOU WERE WELL AWARE OF WELL BEFORE THE
23 ELECTION. YOU HAVE LEARNED NOTHING OTHER THAN THE FACT
24 THAT ONE CANDIDATE WON AND THREE CANDIDATES LOST.

25 MR. MAAZEL: I MEAN, CERTAINLY SOMETHING

1 THAT I KNOW AT LEAST, YOUR HONOR, THAT WE CERTAINLY DID
2 NOT KNOW BEFORE THE ELECTION IS JUST HOW UNBELIEVABLY
3 DIFFICULT IT IS FOR ORDINARY VOTERS TO BE ABLE TO MAKE
4 SURE THEIR VOTES COUNT UNDER THIS ELECTION REGIME.

5 I DON'T THINK AN EFFORT LIKE THIS HAS
6 ACTUALLY EVER TAKEN PLACE, AN ATTEMPTED STATEWIDE VOTER
7 INITIATED RECOUNT. I COULD BE WRONG BUT NOBODY HAS
8 POINTED ME TO ONE AND I THINK THAT THE RECORD DEVELOPED
9 THROUGH THAT EFFORT IS A VERY IMPORTANT PART OF THE
10 RECORD IN THIS CASE. YOU KNOW, WE WOULD NOT HAVE KNOWN
11 ABOUT ALL OF THE SECRET SHIFTING DEADLINES IN THESE
12 COUNTIES.

13 THE COURT: IF I CREDIT THE DEFENDANTS'
14 EXPERT AND DISCREDIT YOURS, YOU ARE OUT-OF-COURT, AM I
15 RIGHT?

16 MR. MAAZEL: WELL, WE HAVE FIVE SO I
17 THINK YOU WOULD HAVE TO DISCREDIT ALL FIVE.

18 THE COURT: JUST TALKING ABOUT THE TWO
19 EXPERTS THAT ARE HERE TODAY. IF I CREDIT THE
20 DEFENDANTS' EXPERT AND THAT MEANS I NECESSARILY
21 DISCREDIT YOUR EXPERT, YOU ARE OUT-OF-COURT, CORRECT?

22 MR. MAAZEL: I ACTUALLY DON'T AGREE WITH
23 THAT, YOUR HONOR. WE WOULD HAVE A HARDER CASE BUT HERE
24 IS WHY I BELIEVE THAT --

25 THE COURT: WELL, A DIPLOMATIC ANSWER BUT

1 I REALLY DON'T SEE HOW, IF I FIND THAT THE POSSIBILITY
2 OF HACKING THE PENNSYLVANIA ELECTION VOTING MACHINES IS
3 RIGHT UP THERE WITH SEEING ELVIS AGAIN, WHICH IS KIND OF
4 WHAT THE DEFENDANTS' EXPERT SAID. IF I CREDIT THAT, HOW
5 DO YOU HAVE A LIKELIHOOD OF SUCCESS ON THE MERITS? HOW
6 DO YOU MAKE OUT IMMEDIATE IRREPARABLE HARM? HOW DO YOU
7 SHOW THAT A BALANCE OF THE EQUITIES, SIX MILLION PEOPLE
8 DIVESTED OF THEIR VOTES VERSUS A SPECULATION OF HACKING?

9 MR. MAAZEL: NO QUESTION. I AGREE WITH
10 YOUR HONOR. I CONCEDE IT WOULD BE A HARDER CASE, MAYBE
11 EVEN A MUCH HARDER CASE. BUT THAT SAID, WE WOULD STILL
12 HAVE THE REALITY OF VOTERS HAVING NO WAY TO VERIFY THEIR
13 OWN VOTES IN THESE DRE MACHINES WHICH IS -- THE GREAT
14 MAJORITY OF THE STATES DO NOT DO ANYTHING LIKE THAT, AND
15 THEN THEIR COMPLETE AND UTTER INABILITY TO HAVE ANY
16 METHOD IN PENNSYLVANIA TO MAKE SURE THEIR VOTES COUNTED
17 WHEN THEY CAN'T VERIFY IT IN ANY WAY THEMSELVES WITH A
18 PAPER BALLOT.

19 NOW, THAT WOULD BE A HARDER CASE IN AND
20 OF ITSELF THAN THE CASE WE HAVE TODAY. I DO CONCEDE
21 THAT BUT IT STILL IS AN ENORMOUS BURDEN PLACED UPON THE
22 PENNSYLVANIA VOTER TO BE ABLE TO MAKE SURE THEIR VOTES
23 COUNTED IN SOME MEANINGFUL WAY. IT'S STILL, I
24 BELIEVE -- THERE WAS A HARDER CASE, WOULD VIOLATE WHAT
25 THE SIXTH CIRCUIT SAID A FEW DAYS AGO, WHICH IS IF YOU

1 ARE GOING TO GIVE VOTERS A RIGHT, YOU CAN'T BURDEN IT TO
2 THE EXTENT THAT THEY ARE UNABLE TO EXERCISE THAT RIGHT.
3 THAT IS EXACTLY THE STATUTORY SCHEME HERE AND THE
4 REALITY ON THE GROUND. I MEAN WHEN I READ THAT LINE IN
5 THE SIXTH CIRCUIT, THAT TO A TEE DESCRIBES EXACTLY WHAT
6 HAS HAPPENED IN PENNSYLVANIA. AND THAT IS THE RECORD
7 THAT WE HAVE DEVELOPED AND THAT IS WHY WE ULTIMATELY HAD
8 TO GO TO COURT. I WISH WE HAD COME A LITTLE EARLIER BUT
9 THE RECORD HAD NOT BEEN DEVELOPED EARLIER.

10 SO IT'S ALL -- THIS IS WHY I BELIEVE THE
11 THIRD CIRCUIT HAS SAID WE HAVE TO LOOK AT EVERYTHING IN
12 COMBINATION. IF WE REMOVE THE PIECE OF MR. HALDERMAN,
13 THE COMBINATION IS WEAKER THAN WITH HIM, I DO CONCEDE
14 THAT, BUT THERE'S STILL A COMBINATION OF FACTORS THAT IS
15 AT LEAST AS BURDENSOME AS A \$5 FILING FEE THAT THE 3RD
16 CIRCUIT SAID VERY CLEARLY VIOLATES THE EQUAL PROTECTION
17 CLAUSE. AND I JUST WANT TO ADD THAT THERE IS NO
18 DISPUTE, I MEAN ONE THING THAT IS REMARKABLE HERE IS
19 THAT THERE IS REALLY NO DISPUTE THAT I HAVE HEARD IN THE
20 PAPERS OR IN TODAY'S ARGUMENT AS TO THE COMPLETE LACK OF
21 NOTICE TO VOTERS. THERE IS NO DISPUTE AS TO THE
22 IMPOSSIBILITY OF VOTERS DOING ANYTHING CLOSE TO A
23 STATE-WIDE RECOUNT. THERE IS NO DISPUTE ABOUT THAT.
24 THERE IS NO DISPUTE AS TO THE MASSIVE FEES --

25 THE COURT: IF THERE IS NO HACKING OF THE

1 VOTE, DO YOU STILL HAVE A CASE?

2 WITH ALL OF THOSE BURDENS, WITH THOSE
3 MEDIOCRE MACHINES, AND THE BYZANTINE NATURE OF
4 PENNSYLVANIA'S 67 COUNTIES AND 67 COUNTY COMMISSIONERS,
5 EACH OF WHOM THINKS HE IS GENGHIS KHAN OR SHE IS GENGHIS
6 KHAN, IF THERE IS NO HACKING, HOW DO YOU STILL HAVE A
7 CASE?

8 MR. MAAZEL: LET'S JUST START WITH
9 MONTGOMERY COUNTY.

10 MR. TABAS SAID THOSE ARE UNDER VOTES. I
11 DO URGE YOUR HONOR TO LOOK AT EXHIBIT 46. THERE WERE
12 ACTUALLY 420,000 UNDER VOTES MEANING PEOPLE WHO DID NOT
13 VOTE FOR EVERY SINGLE THING INCLUDING CONSTITUTIONAL
14 AMENDMENTS AND THE LIKE, BUT THERE WERE 4,087 -- BEFORE
15 I SAID 4,062. ACTUALLY 4,087.

16 THE COURT: I FORGIVE YOU.

17 MR. MAAZEL: 4,087 NO VOTES; NOT UNDER
18 VOTES. NO VOTES. THAT IS THE LAST PAGE OF EXHIBIT 46.
19 SO WE KNOW OR WE DON'T KNOW, WE CAN SAY ALMOST TO
20 100 PERCENT CERTAINTY, CERTAINLY MORE PROBABLE THAN NOT,
21 PROBABLY WAY BEYOND CLEAR AND CONVINCING EVIDENCE THAT
22 4,087 PEOPLE DID NOT JUST SHOW UP AND DECIDE NOT TO VOTE
23 FOR ANYBODY OR ANYTHING AT ALL. THEY JUST WANTED TO BE
24 THERE. THAT IS IN COMBINATION WITH THE FIVE OR SIX
25 AFFIDAVITS WE HAVE IN THE RECORD THAT ESTABLISHED THAT

1 PEOPLE WERE TRYING TO PICK CANDIDATES AND THE NO BUTTON
2 KEPT SHOWING UP. SO THAT IS EVIDENCE. THAT IS
3 DISTURBING, THE IDEA THAT OVER 4,000 PENNSYLVANIA VOTERS
4 HAD BEEN DISENFRANCHISED AND THERE IS ACTUALLY NOTHING
5 THEY CAN DO IN THE STATE SYSTEM TO DEAL WITH THAT. THEY
6 CAN'T TAKE A RECOUNT, THEY CAN'T RECANVASS. NOTHING
7 THAT IS MEANINGFUL. IN AND OF ITSELF THAT IS, IN OUR
8 VIEW, A CONSTITUTIONAL VIOLATION AND THOSE PEOPLE ARE
9 BEING DISENFRANCHISED. WE DON'T WANT TO DISENFRANCHISE
10 ALL OF PENNSYLVANIA, THAT IS NOT OUR GOAL HERE. WE
11 WOULD LIKE TO GET THIS RELIEF.

12 THE COURT: WHAT CAN I DO FOR THOSE --
13 HOW MANY PEOPLE WAS IT, 4,000?

14 MR. MAAZEL: 4,087.

15 THE COURT: WHAT CAN I DO FOR THEM? THE
16 ELECTION HAS BEEN HELD. WHAT IS IT THAT I CAN -- YOU
17 HAVE ASKED FOR A FORENSIC EXAMINATION OF THOSE MACHINES.
18 THE FORENSIC EXAMINATION SAYS YES, 4,000 VOTES WERE NOT
19 RECORDED? WHAT IS IT THAT I DO? WHAT IS IT THAT YOU
20 ARE ASKING ME TO DO THAT I CAN DO TO CORRECT THAT?

21 MR. MAAZEL: THAT FORENSIC EXAMINATION
22 MAY WELL SAY WE FOUND THE MALWARE THAT CHANGED VOTES
23 FROM X CANDIDATE.

24 THE COURT: NO, NO, NO. THOSE 4,000. I
25 CAN'T DO ANYTHING ABOUT THAT. IF, IN FACT, VOTES HAVE

1 NOT BEEN RECORDED AND THERE IS NO RECORD AS YOU SAY,
2 THEN THERE IS NO JUDICIAL REMEDY THAT I CAN THINK OF, IS
3 THERE?

4 MR. MAAZEL: I THINK THERE IS, YOUR
5 HONOR.

6 THE COURT: WHAT IS THAT?

7 MR. MAAZEL: YOU ARE RIGHT THAT THERE IS
8 NO PAPER BALLOT TO LOOK AT, WHICH IS A PROBLEM. THAT
9 MAKES THIS A SOMEWHAT DIFFERENT CASE FROM SOME OTHER
10 CASES BUT -- AND I'M NO COMPUTER EXPERT, BUT IF A
11 COMPUTER EXPERT LOOKS INSIDE THE CODE AND SEES, IF VOTE
12 FOR CERTAIN PERSON, THEN NO VOTE. THEN IT'S CERTAINLY
13 POSSIBLE TO SAY, FOR A FACT FINDER SUCH AS YOUR HONOR TO
14 BE ABLE TO SAY, THOSE VOTES ACTUALLY SHOULD BE COUNTED
15 FOR CERTAIN PERSON. IT'S THE ONE AND ONLY --

16 THE COURT: THAT IS NOT -- THAT IS A
17 PROCESS IN ADDITION TO THE QUICK LOOK THAT YOU ARE
18 PROPOSING, CORRECT?

19 MR. MAAZEL: IT'S SOMETHING THAT COULD BE
20 RESOLVED ON MONDAY.

21 THE COURT: WELL, WHAT COULD BE RESOLVED
22 IS THE -- WHAT YOU VIEW AS THE FORENSIC AUDIT OF SOME
23 NUMBER OF MACHINES. WHETHER OR NOT SOMEBODY CAN DIVINE
24 WHAT A VOTER, THE PERSON A VOTED WANTED TO VOTE FOR WHEN
25 SHE GOT THE NO, IS AN ENTIRELY SEPARATE PROCESS,

1 CORRECT?

2 MR. MAAZEL: IT'S RELATED BUT IT IS
3 SEPARATE, YES.

4 THE COURT: THAT WILL CERTAINLY TAKE US
5 PAST DECEMBER 13TH, CORRECT?

6 MR. MAAZEL: WELL, LET'S PUT IT THIS WAY.

7 THE COURT: LET'S PUT IT MY WAY. IT WILL
8 CERTAINLY TAKE US PAST DECEMBER 13TH?

9 MR. MAAZEL: I THINK IT'S POSSIBLE. I
10 DON'T KNOW WHAT THE FORENSIC EXAMINATION WILL SHOW. I
11 DON'T --

12 THE COURT: IF THE FORENSIC EXAMINATION
13 SHOWS A NEED FOR FURTHER EXAMINATION AND THE FORENSIC
14 EXAMINATION TAKES ONE TO TWO DAYS, AND I'M GIVING YOU
15 THE BENEFIT OF THE DOUBT, THAT IT BEGINS ON MONDAY
16 MORNING AFTER MY DECISION, ASSUMING THAT I RULE IN YOUR
17 FAVOR AND THE THIRD CIRCUIT DOES NOT STAY MY DECISION,
18 THAT IS DONE ON MONDAY. IT HAS TO BE CERTIFIED ON
19 TUESDAY. IT CAN'T BE CERTIFIED ON TUESDAY, CAN IT?

20 MR. MAAZEL: I THINK IF IT WERE MONDAY TO
21 TUESDAY, IT WOULD BE EXTREMELY DIFFICULT. I WOULD LIKE
22 TO MAKE A POINT IN RESPONSE TO THAT, YOUR HONOR.

23 THE COURT: PLEASE.

24 MR. MAAZEL: WHICH IS, IF THERE IS A
25 FORENSIC EXAMINATION AND IT SHOWS THAT THERE WAS MALWARE

1 ON THE CENTRAL COMPUTER SYSTEMS OF SIX COUNTIES IN
2 PENNSYLVANIA THAT AFFECTED WHO -- THE ACCURATE TALLY OF
3 THE VOTE. IF WE LEARN THAT THERE WAS THIS SORT OF
4 HACKING AND FRAUD IN THE STATE, I THINK THERE WOULD BE
5 SERIOUS QUESTIONS AT THAT POINT ABOUT WHETHER IT WOULD
6 BE PROPER. THEN THE QUESTION IS, WHO ARE WE
7 DISENFRANCHISING? ARE WE DISENFRANCHISING THE
8 PENNSYLVANIA VOTERS WHO VOTED FOR ONE CANDIDATE OR THE
9 OTHER? IS THERE A SERIOUS QUESTION AS TO WHO THE
10 ELECTORS SHOULD BE? WE SHOULD KNOW THAT. I MEAN, IT
11 SEEMS TO ME THE ALTERNATIVE CAN'T BE TO DEPRIVE US OF
12 THAT INFORMATION, BECAUSE THAT WOULD DISENFRANCHISE THE
13 PEOPLE WHO ACTUALLY VOTED FOR A CERTAIN CANDIDATE AND SO
14 I JUST DON'T THINK THE -- THE ALTERNATIVE IS WORSE.

15 THE COURT: DARE I SAY YOU ARE OUT OF
16 TIME? IF YOU CAN CONCLUDE, I WOULD BE VERY GRATEFUL.

17 MR. MAAZEL: OF COURSE.

18 I WOULD JUST, IN CONCLUSION, SAY THAT THE
19 GREAT MAJORITY OF OUR RECORD IS UNDISPUTED.

20 THIS IS A REGIME THAT IS UNFAIR TO
21 PENNSYLVANIA VOTERS. IT REALLY SUBVERTS OUR DEMOCRACY
22 AND I WOULD RESPECTFULLY REQUEST THAT YOU GRANT THE
23 PRELIMINARY INJUNCTION. THANK YOU, YOUR HONOR.

24 THE COURT: THANK YOU, MR. MAAZEL.

25 MR. JOEL: FIVE MINUTES.

1 THE COURT: ALL RIGHT.

2 MR. JOEL: MIGHT EVEN TAKE LESS.

3 THE COURT: WHAT IS THE COMMONWEALTH'S
4 POSITION AS TO HOW LONG JUST THE HAND RECOUNT WOULD
5 TAKE?

6 MR. JOEL: DEPENDS ON THE NUMBER OF
7 PRECINCTS AND I MEAN --

8 MS. UNGER: OUR WITNESS WHO CAN TESTIFY
9 TO THAT IS OUTSIDE. WE CAN GET THE ANSWER WITHIN A
10 MINUTE.

11 THE COURT: I GUESS WHAT I'M ASKING IS,
12 CAN ANY RELIEF BE AFFORDED THAT IS BEING REQUESTED HERE
13 WITHOUT BUTTING UP AGAINST THE DECEMBER 13TH DATE?

14 MR. JOEL: IT'S OUR POSITION, IT REALLY
15 CAN'T.

16 THE COURT: THAT ANSWERS MY QUESTION.

17 MR. JOEL: I THINK THE ONLY -- I JUST
18 WANT TO MAKE A FEW VERY QUICK POINTS. ONE, TO HIGHLIGHT
19 THE FACT THAT WHEN DR. HALDERMAN WAS ON THE STAND, HE
20 CONCEDED HACKING PROBABLY NOT.

21 THE COURT: IS YOUR EXPERT STILL HERE?

22 MR. JOEL: YES.

23 THE COURT: THERE HE IS.

24 I WOULD LIKE TO HEAR -- UNLESS THE
25 PARTIES HAVE AN OBJECTION, I WOULD LIKE TO HEAR FROM

1 BOTH EXPERTS ON THE LENGTH OF TIME THAT WOULD BE
2 NECESSARY TO GRANT VARIOUS FORMS OF RELIEF AND -- WHY
3 DON'T WE TAKE A SHORT BREAK SO THE PARTIES CAN TALK TO
4 THEIR WITNESSES BEFORE THEY CALL THEM, WHICH IS USUALLY
5 A GOOD IDEA.

6 THE CLERK: ALL RISE.

7 (BREAK TAKEN.)

8 THE CLERK: ALL RISE.

9 THE COURT: PLEASE BE SEATED. I WOULD
10 LIKE TO HEAR FROM DR. HALDERMAN FIRST. THERE IS NO NEED
11 TO SEQUESTER THE WITNESSES FOR THIS TESTIMONY.

12 DR. HALDERMAN, PLEASE TAKE THE STAND.

13 MR. CELLI: DID YOU WANT TO QUESTION?

14 THE COURT: I WILL QUESTION.

15 BY THE COURT:

16 Q. PLEASE, YOU ARE STILL UNDER OATH, DOCTOR.

17 A. YES, YOUR HONOR.

18 THE COURT: MR. MAAZEL, THE LEAST FORM OF
19 RELIEF YOU WANT IS A MANUAL RECOUNT OF WHAT?

20 MR. MAAZEL: A MANUAL RECOUNT OF ONE
21 PRECINCT PER OPTICAL SCAN COUNTY EXCEPT FOR CHESTER,
22 WHERE THEY ARE ALREADY DOING RECOUNTING.

23 THE COURT: SO HOW MANY HAND RECOUNTS
24 WOULD THAT BE? HOW MANY OPTICAL SCAN COUNTIES ARE
25 THERE?

1 MR. TABAS: 17.

2 BY THE COURT:

3 Q. HOW LONG DO YOU THINK THAT WOULD TAKE, DOCTOR?

4 IS THAT WITHIN YOUR AREA OF EXPERTISE, A
5 HAND RECOUNT OF OPTICAL SCAN COUNTIES? IT DOES NOT
6 SOUND LIKE IT.

7 A. NO, I DON'T KNOW.

8 Q. SO YOU DON'T KNOW?

9 A. NO, I DON'T KNOW.

10 THE COURT: THE OTHER FORM OF RELIEF YOU
11 ARE LOOKING FOR IS?

12 MR. MAAZEL: IS A FORENSIC EXAMINATION OF
13 THE CENTRAL COMPUTER SYSTEMS OF SIX COUNTIES.

14 THE COURT: ANY SIX IN PARTICULAR?

15 MR. MAAZEL: WELL, THE IDEA WAS -- I DO
16 HAVE A LIST HERE.

17 IT WAS SIX COUNTIES, EACH REPRESENTING
18 THE SIX TYPE OF DRE MACHINES AND THE IDEA WAS TO PICK
19 THE BIGGEST COUNTY THAT USES THAT MACHINE.

20 THE COURT: WITH THAT UNFORTUNATELY VERY
21 VAGUE GUIDELINE, DOCTOR.

22 MR. MAAZEL: I DO HAVE THE LIST HERE, I
23 APOLOGIZE.

24 BY THE COURT:

25 Q. DO YOU KNOW ONE PENNSYLVANIA COUNTY FROM

1 ANOTHER?

2 A. YES, I WAS BORN IN BUCKS COUNTY.

3 Q. CONGRATULATIONS. GO AHEAD.

4 THE COURT: PLEASE GIVE THE NAMES OF THE
5 COUNTIES.

6 MR. MAAZEL: THEY ARE PHILADELPHIA,
7 ALLEGHENY, MONTGOMERY, LANCASTER, YORK AND WASHINGTON.

8 THE COURT: AND YOU WANT TO DO WHAT?

9 MR. MAAZEL: A FORENSIC EXAMINATION OF
10 THE CENTRAL COMPUTER SYSTEM IN EACH OF THOSE SIX.

11 BY THE COURT:

12 Q. HOW LONG DO YOU THINK THAT WILL TAKE?

13 A. WE ARE PREPARED TO START IMMEDIATELY OR IN THE
14 MORNING ANYWAY WITH SIX DIFFERENT TEAMS TO DO THAT. I
15 BELIEVE THAT WE COULD COMPLETE BY MONDAY MORNING A
16 FORENSIC EXAMINATION THAT WOULD HAVE A SUBSTANTIAL
17 PROBABILITY OF REVEALING ANY ELECTION --

18 Q. SO IF YOU BEGAN AT 11 O'CLOCK ON MONDAY, WHEN DO
19 YOU THINK YOU WOULD BE DONE --

20 A. 11 O'CLOCK ON MONDAY. I THINK IF WE DIDN'T
21 SLEEP, IT WOULD -- WE COULD FINISH SOMETIME LATE ON
22 TUESDAY, BUT WE ARE PREPARED TO START EARLIER THAN THAT,
23 OF COURSE.

24 THE COURT: OKAY. THANK YOU, DOCTOR.

25 MR. JOEL: DR. SHAMOS.

1 THE COURT: DR. SHAMOS. YOU ARE STILL
2 UNDER OATH.

3 THE WITNESS: YES, YOUR HONOR.

4 BY THE COURT:

5 Q. DO YOU FEEL COMPETENT TO OFFER AN EXPERT OPINION
6 ON HOW LONG IT WOULD TAKE TO DO THE HAND RECOUNT OF ONE
7 PRECINCT IN ALL 17 COUNTIES WHERE THEY IS ARE STILL
8 MANUAL VOTING?

9 A. YES. I PARTICIPATED IN HAND RECOUNT IN TEXAS.

10 Q. HOW LONG DO YOU THINK THAT RECOUNT WOULD TAKE?

11 A. OKAY. SO DOING A HAND RECOUNT, THERE ARE TWO
12 PHASES.

13 FIRST, THE RECRUITING OF THE PEOPLE WHO
14 ARE GOING TO BE DOING THE RECOUNT AND THEIR TRAINING,
15 TELLING THEM WHAT TO DO.

16 AND THEN THERE IS THE PROCESS OF ACTUALLY
17 DOING IT, WHICH DEPENDS, OF COURSE, ON THE TOTAL NUMBER
18 OF BALLOTS THAT WERE CAST AND THE TOTAL NUMBER OF PEOPLE
19 THAT ARE AVAILABLE TO DO SUCH A RECOUNT.

20 OF COURSE, THE PROBLEM WITH SUCH RECOUNTS
21 IS NO MATTER HOW MANY TIMES YOU DO THEM, YOU NEVER GET
22 THE SAME ANSWER TWICE.

23 THE COURT: CAN SOMEONE NAME THE 17
24 COUNTIES?

25 CAN WE HAVE ANY AGREEMENT AMONG AND

1 BETWEEN COUNSEL AS TO THE NUMBER OF BALLOTS THAT WOULD
2 HAVE TO BE RECOUNTED BY HAND?

3 MR. CELLI: I CAN. I CAN NAME --

4 THE COURT: I'M NOT SURE THAT OUR
5 STENOGRAPHER CAN HEAR ANYTHING YOU ARE SAYING.

6 MR. CELLI: EXHIBIT 1 TO THE
7 DEFENDANTS' --

8 THE COURT: ONCE MORE WITH FEELING,
9 PLEASE.

10 MR. CELLI: EXHIBIT 1 TO THE DEFENDANTS'
11 PAPERS IS A MAP OF THE COMMONWEALTH WHICH SHOWS ALL OF
12 THE COUNTIES.

13 THE COURT: YES.

14 MR. CELLI: IT SAYS THAT THERE ARE 13
15 OPTICAL SCAN COUNTIES.

16 THE COURT: MR. TABAS SAYS 17.

17 MR. TABAS: I THOUGHT IT WAS 17. I SAID
18 THAT BASED ON WHAT MR. MARKS HAD TOLD -- THE
19 COMMISSIONER HAD TOLD ME.

20 THE COURT: ARE WE DEALING WITH TENS OF
21 THOUSANDS OF VOTES?

22 MR. CELLI: NO. ONE PRECINCT PER. WE
23 ARE ACTUALLY IN AGREEMENT BECAUSE THERE ARE SOME
24 COUNTIES ACCORDING TO THE MAP THAT THE DEFENDANTS PUT IN
25 THAT HAVE BOTH DRE AND OPTICAL SCAN.

1 THE COURT: I JUST WANT TO KNOW HOW MANY
2 BALLOTS WOULD HAVE TO BE RECOUNTED.

3 MR. HARVEY SAYS NO MORE THAN 1500.

4 MR. HARVEY: TO DO ONE PRECINCT IN EACH
5 COUNTY, YOUR HONOR, WOULD REQUIRE COUNTING NO MORE THAN
6 1500 PAPER BALLOTS IN EACH COUNTY.

7 THE COURT: WE ARE NOT TALKING ABOUT MORE
8 THAN 20,000 BALLOTS AT MOST, ALL TOGETHER.

9 MR. HARVEY: THEY ARE ALL TO BE COUNTED
10 IN DIFFERENT PLACES AND IN MY EXPERIENCE --

11 THE COURT: I'M SORRY, MR. HARVEY. YOU
12 ARE NOT AN EXPERT.

13 MR. HARVEY: ALL RIGHT.

14 BY THE COURT:

15 Q. DOCTOR...

16 A. YOUR HONOR.

17 Q. COUNTING BETWEEN 15 AND 20,000 BALLOTS IN
18 BETWEEN 13 TO 17 COUNTIES WHICH WE DON'T HAVE AGREEMENT,
19 HOW LONG WOULD THAT TAKE, HAND COUNT?

20 A. THE WAY I'M LOOKING AT IT IS THAT IF YOU HAD
21 SEPARATE TEAMS IN EACH ONE OF THE COUNTIES THEY WOULD BE
22 WORKING SIMULTANEOUSLY. IF YOU ARE JUST LOOKING AT THE
23 TOTAL CHRONOLOGICAL TIME I THINK YOU COULD PROBABLY
24 COUNT 1500 BALLOTS BY HAND IN A DAY, A LONG DAY.

25 Q. A LONG DAY.

1 SO IF THEY WERE PREPARED TO GET STARTED
2 ON MONDAY MORNING --

3 THE COURT: MR. MAAZEL, DO YOU HAVE 17
4 TEAMS OF PEOPLE WHO HAVE BEEN TRAINED IN HAND COUNTING
5 BALLOTS THAT ARE PREPARED TO GET STARTED FIRST THING
6 MONDAY?

7 MR. MAAZEL: I BELIEVE, YOUR HONOR,
8 USUALLY IT IS THE COUNTY BOARD THAT ORGANIZES THOSE.

9 THE COURT: SO WE DON'T HAVE ANYTHING
10 BECAUSE THE COUNTY BOARD --

11 BY THE COURT:

12 Q. SO FIRST, THE COUNTY BOARD WOULD HAVE TO
13 ORGANIZE IT AND ONCE IT DID ORGANIZE IT AND THE COUNTING
14 STARTED, IT WOULD TAKE A FULL DAY?

15 A. YES, YOUR HONOR.

16 Q. IN YOUR EXPERIENCE, HOW LONG DOES IT TAKE IN
17 PENNSYLVANIA FOR THE COUNTY BOARDS TO SELECT PEOPLE TO
18 DO A HAND RECOUNT?

19 A. I DON'T HAVE BACKGROUND IN THAT.

20 THE COURT: OKAY. NOW, REMIND ME AGAIN,
21 MR. MAAZEL, THE FORENSIC AUDIT YOU WANT IS WHAT?

22 MR. MAAZEL: IT IS A FORENSIC AUDIT OF
23 THE CENTRAL ELECTION MANAGEMENT SYSTEM OF THESE
24 COUNTIES. IT'S BASICALLY COPYING A HARD DRIVE.

25 THE COURT: OF HOW MANY COUNTIES?

1 MR. MAAZEL: SIX.

2 THE COURT: SIX COUNTIES. AND YOU NAMED
3 THE SIX INCLUDING PHILADELPHIA?

4 THE WITNESS: YES, SIMULTANEOUSLY.

5 BY THE COURT:

6 Q. HOW LONG WOULD SUCH A FORENSIC AUDIT TAKE IN
7 YOUR EXPERT OPINION, DOCTOR?

8 A. WELL, I DON'T AGREE THAT THAT IS THE FORENSIC
9 AUDIT. THAT IS THE NECESSARY PREPARATION TO DO A
10 FORENSIC AUDIT, WHICH IS, YOU CAN'T TAKE THE VOTING
11 MACHINE ITSELF BECAUSE ONCE IT HAS BEEN OUT OF THE
12 CUSTODY OF THE COUNTY IT IS NOT SAFE FOR USE IN AN
13 ELECTION ANYMORE. SO WHAT YOU DO IS YOU MAKE A COPY OF
14 THE HARD DRIVE THAT IS ON THE MACHINE. THEN THAT HARD
15 DRIVE HAS TO BE SUBJECTED TO A FORENSIC EXAMINATION, AND
16 I DON'T KNOW WHAT THEY ARE ACTUALLY LOOKING FOR. IF
17 THEY ARE LOOKING FOR THE PRESENCE OF CERTAIN MALWARE --

18 Q. THEY ARE LOOKING FOR BAD ACTS, MISCONDUCT,
19 TAMPERING, HACKING.

20 A. IT'S DIFFICULT FOR ME TO IMAGINE HOW THERE COULD
21 BE A FORENSIC EXAMINATION THAT WOULD REVEAL, FOR
22 EXAMPLE, THE VERY SCENARIO THAT THEY POSIT, WHICH IS
23 THIS MALWARE WHICH ERASES ITSELF AFTER IT HAS DONE ITS
24 BAD WORK. THAT WOULD NOT BE REVEALED IN SUCH A FORENSIC
25 AUDIT.

1 Q. SO YOU ARE SAYING NO AMOUNT OF TIME?

2 A. NOT FOR THAT SCENARIO.

3 Q. WHAT SCENARIO?

4 A. THE SCENARIO --

5 Q. WHAT SCENARIO -- WHAT KIND OF AUDIT COULD BE
6 CONDUCTED IN LESS THAN A DAY? WHAT KIND OF FORENSIC
7 AUDIT COULD BE CONDUCTED IN LESS THAN A DAY?

8 A. THE ONLY THING THAT I COULD SEE BEING DONE IN
9 LESS THAN A DAY WOULD BE A BITWISE COMPARISON. BIT FOR
10 BIT OF --

11 Q. OF THE AMOUNT OF INFORMATION?

12 A. -- OF WHAT THE SOFTWARE ON THE MACHINE SHOULD BE
13 VERSUS WHAT IT ACTUALLY IS.

14 Q. THAT IS IT?

15 A. BUT THE PROBLEM IS, THAT IS A PARTICULAR
16 PROGRAM. THAT DOES NOT COUNT EVERYTHING GOING ON IN THE
17 OPERATING SYSTEM, ET CETERA, SO I'M NOT SURE WHAT WOULD
18 BE REVEALED BY SUCH A QUICK AUDIT.

19 THE COURT: OKAY. THANK YOU, DOCTOR.
20 MR. JOEL, YOU HAVE FIVE MINUTES LEFT IF YOU CARE TO
21 SPEAK.

22 MR. JOEL: I'LL ACCEDE IT, YOUR HONOR.
23 THANK YOU.

24 THE COURT: I HAVE ORDERED THAT NO
25 ADDITIONAL PAPERS BE FILED BECAUSE THE LAST ONE OF THESE

1 I HAD WHICH WAS A MONTH AGO PEOPLE WERE FILING THINGS UP
2 UNTIL 1:30 IN THE MORNING THAT I HAD TO RULE. AND SO IF
3 YOU FEEL YOU HAVE TO FILE SOMETHING, I BELIEVE MY CLERK
4 HAS MADE IT EASY FOR YOU TO CONTACT HIM, BEN, AND PLEASE
5 CALL BEN, HE KNOWS HOW TO GET HOLD OF ME. IF THERE IS
6 SOMETHING YOU REALLY FEEL -- I REALLY WOULD LIKE TO GET
7 THIS DONE BY MONDAY MORNING, WHICH IS GOING TO BE HARD
8 IF YOU FILE NEW ARGUMENTS AND SO FORTH. BUT IF YOU
9 FEEL -- IF YOU FEEL YOU REALLY HAVE TO DO IT, PLEASE
10 CALL MY CLERK AND I WILL GIVE YOU A VERY, VERY PROMPT
11 RULING.

12 ANYTHING FURTHER?

13 MR. JOEL: NO, YOUR HONOR, NOT FROM THE
14 COMMONWEALTH.

15 MR. TABAS: NO, YOUR HONOR.

16 MR. MAAZEL: NOT FROM THE PLAINTIFFS.
17 THANK YOU VERY MUCH, YOUR HONOR.

18 THE COURT: MY THANKS TO ALL COUNSEL. I
19 KNOW JUST HOW HARD YOU HAVE ALL BEEN WORKING. I HOPE
20 YOUR CLIENTS APPRECIATE ALL YOUR HARD WORK AS MUCH AS I
21 DO. THANK YOU.

22 THE CLERK: ALL RISE.

23 (COURT ADJOURNED 4:10 P.M.)
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I CERTIFY THAT THE FOREGOING IS A CORRECT
TRANSCRIPT FROM THE RECORD OF PROCEEDINGS IN THE
ABOVE-ENTITLED MATTER.

DATE	OFFICIAL COURT REPORTER
	SUZANNE R. WHITE

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I N D E X

WITNESS DIRECT CROSS REDIRECT RECROSS

J. ALEXANDER HALDERMAN

BY MR. CELLI	12	--	27	--
BY MR. JOEL	--	23	--	--
BY MR. TABAS	--	26	--	--

MICHAEL SHAMOS

BY MR. JOEL	43	--	--	--
BY MS. FRICK	--	66	--	--

EXHIBITS MARKED PAGE

D 6 65

EXHIBIT 3

Securing the Vote

Protecting American Democracy

Committee on the Future of Voting:
Accessible, Reliable, Verifiable Technology

Committee on Science, Technology, and Law

Policy and Global Affairs

Computer Science and Telecommunications Board

Division on Engineering and Physical Sciences

A Consensus Study Report of
The National Academies of
SCIENCES • ENGINEERING • MEDICINE

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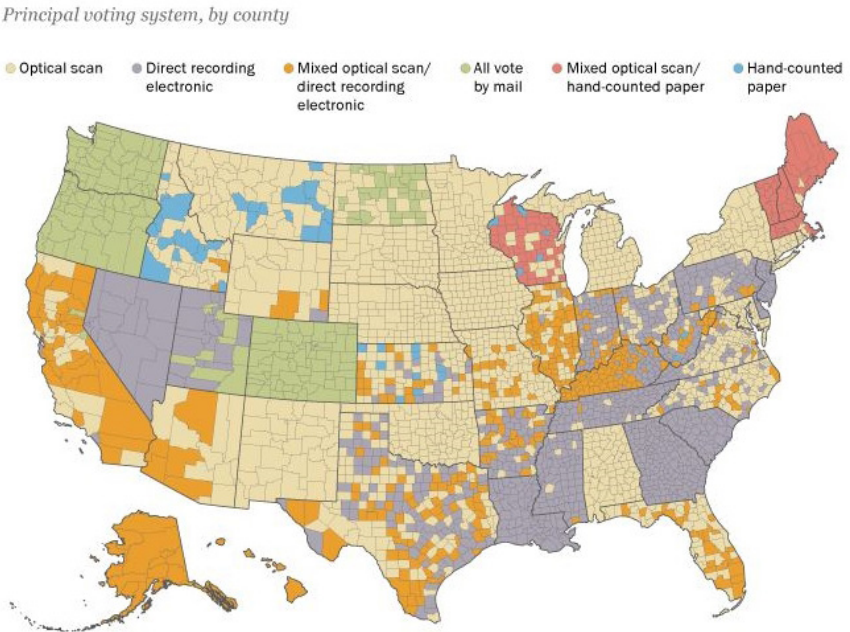


FIGURE 3-4 Voting systems across the United States.
SOURCE: Desilver, Drew, “On Election Day, Most Voters Use Electronic or Optical-Scan Ballots,” Pew Research Center, November 8, 2016. Pew Research Center created the figure using data from the Verified Voting Foundation.

BOX 3-1
Overview of Vote Casting and Tabulation Methods

Systems in Use in Federal Elections

Hand-Marked “Optical” Scan Paper Ballot Systems. Voters mark paper ballots that are subsequently recorded electronically by scanning devices. On most scanned ballots, voters indicate their selections by filling in an oval or completing an arrow. Ballots may either be scanned on precinct-based optical scan systems in a polling place (precinct count) or collected in a ballot box to be scanned at a central location (central count). The original generation of optical ballot scanners used one row of optical sensors, one sensor per ballot column, to detect the voters’ marks. Newer ballot scanners, sometimes referred to as “digital scanners,” store an electronic image of each ballot [a “cast vote record” (CVR)], which can be used later if auditing of the election process is required.^a The original generation

BOX 3-1 Continued

of ballot scanners used infrared sensors to detect ballot marks, giving rise to the generic term “optical scanner.” Optical scanners are still used even though newer image-processing technologies are available.

Direct Recording Electronic (DRE) Systems. Voters use an electronic interface to record their votes directly into a computer’s memory (e.g., onto a memory cartridge or memory card). That computer counts the vote. A keyboard is typically provided to allow entry of write-in votes, though older models have a paper roll behind a small opening where voters record write-in votes using a pen.

The first generation of DREs used a push-button interface, while later systems use a touchscreen interface or a dial interface.^b

Some DREs are equipped with a voter-verifiable paper audit trail (VVPAT) feature that prints the voter’s selections on paper and allows voters to confirm their selections by inspecting this paper before their votes are cast. The paper record is preserved and, depending on state election codes, may serve as the ballot of record in the event of an audit or recount.

Machine-Marked Paper Ballot Systems. A growing number of jurisdictions are using electronic “ballot-marking devices” (BMDs), which use electronic devices to mark paper ballots according to voters’ instructions. The paper ballots are usually counted by optical scanners.

Hand Counted Paper Ballots. A small number of jurisdictions continue to manually count paper ballots cast in polling places.

Systems No Longer In Use In Federal Elections

Punch Card Voting Systems. Those systems employed a card (or cards) and a small clipboard-sized device for recording votes. Voters marked their choice by punching holes in the cards with a punch device. After voting, the voter either placed the ballot in a ballot box for later tabulation or the ballot was fed into a vote-tabulating device at the precinct. No jurisdictions used punch card voting systems in federal elections in 2016.

Mechanical Lever Voting Machines. First introduced in the 1890s, mechanical lever machines were used in many states during the 20th century. Voters would make choices by flipping levers and their selections were tabulated on machine counters similar to automobile odometers. As recently as 1996, mechanical lever machines were used by 20.7 percent of registered voters in the United States. Since 2010, no mechanical lever voting machines have been used in federal elections.

^a Some scanners also store a digital photograph of the ballot.

^b See Jones, Douglas W. and Barbara Simons, *Broken Ballots: Will Your Vote Count?* (Stanford: Center for Language and Information, 2012), pp. 91-101.

BOX 3-2

The Role of Paper in Elections

Until the widespread adoption of mechanical lever machines in the mid-20th century, hand-marked paper had been the most common medium upon which a voter cast a ballot. The cast paper ballot provided a physical record that could be examined in instances where a recount or other reconciliatory action was required. With the advent of mechanical lever machines, no record of a voter's choices was permanently stored, either on paper or mechanically—the only effect of casting a vote was to increment mechanical counters that accumulated the choices made by voters on a particular machine. Mechanical lever machines were popular where they were used. However, these machines were prone to breakdowns that could go undetected until balloting had ended.

Before the passage of the Help America Vote Act (HAVA), it was common for jurisdictions with lever machines to adopt electronic systems when they considered upgrading their voting systems. HAVA provided an impetus for jurisdictions that had previously used lever machines to adopt Direct Recording Electronic systems (DREs), either to provide accessible options for those with disabilities, or to replace paper-based systems altogether. The rapid growth in the prominence of DREs brought greater voice to concerns about their use, particularly their vulnerability to software malfunctions and external security risks. And as with the lever machines that preceded them, without a paper record, it is not possible to conduct a convincing audit of the results of an election.

Many electronic voting systems utilize paper as part of their operation. As discussed in Box 3-1, voters may mark paper ballots that are subsequently recorded electronically by scanning devices. Alternatively, ballot-marking devices may be used to mark paper ballots according to voters' instructions. In the case of DREs, there is no physical (i.e., paper) ballot. Instead, the ballot exists only in electronic form.

Problems arise when a voter does not actually verify his or her ballot, especially when the ballot is being tabulated by a computer that has a software flaw or is infected with malware (see Chapter 5). A ballot that is “voter marked” is by definition voter verified. Voters can verify that the selections on hand-marked ballots or on paper ballots produced by BMDs reflect their intended choices before their votes are tabulated. With DREs, voters may similarly verify their selections using a voter-verifiable paper audit trail (VVPAT) (see Box 3-1)—provided that the DRE is equipped with this feature. The information on a VVPAT may accurately present a voter's selections, but VVPATs exist independently of the record maintained in the DRE's computer memory. In most cases it is the electronic record, and not the VVPAT, that is used for vote tabulation.^a

Paper Ballots Defined

Because records of ballots may take many forms, it is important to clearly define what is meant by “paper ballot.” For the purposes of this report, references to paper ballots refer to original records that are produced by hand or a ballot-marking device, which are human-readable in a manner that is easily accessible for inspection and review by the voter without any computer intermediary (i.e.,

voter-verifiable), countable by machine (such as a scanner) or by hand, and which may be recounted or audited by manual examination of the human-readable portion of the ballot.

A paper ballot-based voting system makes the paper ballot the official “ballot of record” of the voter’s expressed intentions. Other representations (e.g., an electronic representation produced by a scanner) are derivative and are not voter-verifiable. The human-readable portion of the cast paper ballot provides the basis for audits and recounts.

The Challenges of Paper Ballots

The use of hand-marked paper ballots can introduce voting errors. Voters may inadvertently make stray marks that can be misread by optical scanners. Voters using hand-marked paper ballots may accidentally skip a race or vote for multiple candidates in a race and thereby invalidate their vote for that particular race.^b Counting paper ballots can be tedious, leading to vote-count errors.^c

Paper ballots are not immune to fraud. Fraud may occur through ballot theft, destruction, or substitution, by ballot-box stuffing, or by the addition of marks to ballots after a voter finishes voting.^d

Paper ballots can present logistical challenges when used in vote centers and in early voting, especially in densely populated, metropolitan areas. In vote centers and in early voting, every jurisdiction-specific ballot “style” that might conceivably be requested by a voter in a jurisdiction must be available at every voting site. In smaller jurisdictions, this functional requirement can be satisfied by having a physical inventory of every ballot style that might be requested at a site, through what is known as a “pick-and-pull” system. In larger jurisdictions that might have hundreds of ballot styles, maintaining a complete, secure inventory of ballot styles in every voting location may be logistically impossible or cost-prohibitive. One solution to this problem is a “ballot-on-demand” system, where appropriate ballots are printed on the spot for every voter. However, certain ballot-on-demand systems are costly and can put significant strain on the electrical systems of buildings hosting these systems.^e

Electronic voting systems introduce challenges in and of themselves. Such systems are, for example, more costly than systems that use paper exclusively. Technical support for such systems is often necessary and adds to their cost over time. Such systems may also be more prone to breakdowns, are subject to technological obsolescence, and as is discussed in Chapter 5, vulnerable to cyberattacks and other threats. Furthermore, electronic systems must be stored in secure locations when not in use.

^a As noted in Box 3-1, in some states, when a VVPAT is produced by a DRE, the VVPAT may be used as the ballot of record for election contests and recounts.

Research suggests that DRE VVPATs tend not to be voter verified. This suggests that VVPATs may be of little value as a check on the accuracy of DREs. See, e.g., Everett, S. P., “The Usability of Electronic Voting Machines and How Votes Can Be Changed Without Detection,” doctoral dissertation, Rice University, Houston, Texas and Campbell, Bryan A. and Michael D. Byrne, “Now Do Voters Notice Review Screen Anomalies? A Look at Voting System Usability,” *Proceedings of EVT/WOTE*, 2009.

continued

BOX 3-2 Continued

Research on the rate of voter verification of BMD ballots relative to the rate of verification of VVPATs or voter-marked paper ballots has been limited.

^b Voters may also accidentally skip races when using DREs (see Chapter 4).

^c For a discussion of the inherent weaknesses in human vote counting, see Goggin, Stephen N., Michael D. Byrne, and Juan E. Gilbert, “Post-election Auditing: Effects of Procedure and Ballot Type on Manual Counting Accuracy, Efficiency, and Auditor Satisfaction and Confidence,” *Election Law Journal: Rules, Politics, and Policy*, 2012, Vol. 11, No. 1, pp. 36-51. A recount or audit can make use of limited software (e.g., spreadsheets) to assist in the counting.

Dr. Gilbert is a member of the committee that authored the current report.

^d Such fraud provided motivation for the adoption of mechanical lever voting machines in the late 19th century.

^e Power usage is determined by the type of printer required to produce the desired ballot. In instances where a printer must create an entire blank ballot certified to meet particular specifications using paper of a specific quality, be digitally readable, and be assigned a unique serial number, the necessary printer may draw significantly more power than is typical for printers used to print only voter selections on archival thermal paper.

TABLE 3-1 Types of Voting Systems Used in the United States in 2016

Voting System	Percent of U.S. Counties Using System
Hand Counted Paper Ballot	1.54%
Optical Scan	62.78%
Electronic (DRE or BMD)	32.85%
Mixed	2.69%

SOURCE: Brace, Kimball, President, Election Data Services, Inc., “The Election Process from a Data Perspective,” presentation to the Presidential Advisory Commission on Election Integrity, September 12, 2017, Manchester, NH, available at: <https://www.electiondataservices.com/wp-content/uploads/2017/09/BracePresentation2PenseCommAmended.pdf>.

ally counted or voted with a mixture of systems (see Table 3-1). In many instances, marked ballots are submitted by mail and tabulated at a central location.

HAVA requires that each polling place used in a federal election

be accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) ²⁹ as for other voters . . . through the use of at least one

²⁹ Participation also includes the ability to cause one’s own ballot selections to be recorded, verifying that one’s ballot selections are correctly recorded, and the casting of one’s self-verified ballot.

EXHIBIT 4

**Jennifer Cohn**

@jennycohn1

Follow



I hate to be Debbie Downer, but this agreement allows PA to buy awful "universal use" touchscreen ballot markers and scanners, which. generate the COMPUTER marked so-called "paper ballots" w/ barcodes that I've been warning about. Vote suppressors like Brian Kemp love them... 1/

Dr. Jill Stein 🌻🔵 @DrJillStein

BREAKING: Huge victory for election integrity! We just settled our #recount lawsuit in Pennsylvania for a guarantee that PA will use paper ballots by 2020, followed in 2022 by post-election audits to verify the vote before results are certified. Details: votingjustice.us/pa_recount_set...

7:04 AM - 29 Nov 2018

1,950 Retweets **2,358** Likes

💬 148

↻ 2.0K

❤️ 2.4K



Jennifer Cohn @jennycohn1 · 29 Nov 2018



And why does PA get to kick the manual audit ball down the road until 2022? WTH? If we keep congratulating officials for refusing to use HAND marked paper ballots (counted by hand or on scanners) & postponing manual audits, we are doomed. 2/



15



238



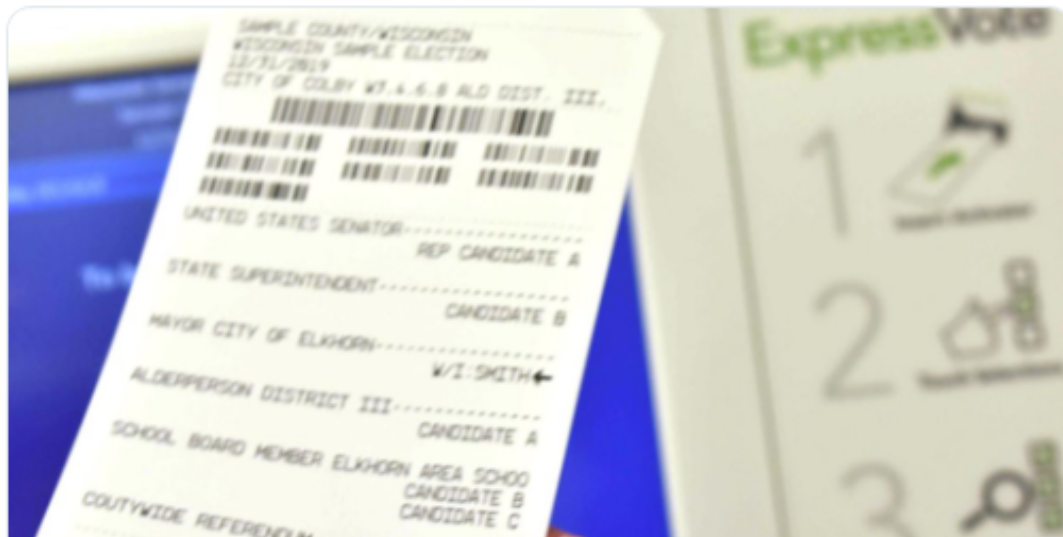
478



Jennifer Cohn @jennycohn1 · 29 Nov 2018



3/ Here is my sourced article about the many dangers of these new universal use touchscreen ballot markers.



States are flocking to buy the new “universal use” touchscreen ballo...

By Jennifer Cohn, May 13, 2018

medium.com



















7



196



309

-  **Jennifer Cohn** @jennycohn1 · 29 Nov 2018 ▼
4/
- Jennifer Cohn** @jennycohn1
10/ As with VVPATs, a recent study (awaiting peer review) shows that most voters don't review summary cards and won't notice errors if they do.
nybooks.com/daily/2018/11/...
[Show this thread](#)
-  1  80  163
-  **Jennifer Cohn** @jennycohn1 · 29 Nov 2018 ▼
5/ The all-in-one version of these touchscreen ballot markers include what IT expert Andrew Appel calls a "permission to cheat" feature bc the machine can tell when voters decide NOT to review the computer marked "paper ballot" & flip those votes.
- Jennifer Cohn** @jennycohn1
You might want to watch out for the permission to cheat feature... IT expert Andrew Appel's words, not mine. [twitter.com/jennycohn1/sta...](https://twitter.com/jennycohn1/status/1066111111111111111) 2/
-  1  132  202
-  **Jennifer Cohn** @jennycohn1 · 29 Nov 2018 ▼
6/ No manual audit in the world would be able to detect this cheating. And yet watch everyone in the media congranulate Stein for this terrible settlement.
-  7  107  196
-  **Jennifer Cohn** @jennycohn1 · 29 Nov 2018 ▼
7/ [@VerifiedVoting](#) and lawmakers will no doubt praise this awful agreement as well.
-  2  71  141



Jennifer Cohn @jennycohn1 · 29 Nov 2018

8/ One of my articles about the use of ExpressVote touchscreen ballot markers in Kansas and the many problems they caused & have the potential to cause.



Kobach's Kansas Victory Tainted by...Kobach's Ele...

By Jennifer Cohn Kris Kobach, Kansas's top election official, recently declared victory in the highly publicized Republican gubernatorial primary in Kansas, surpassin...
legacy.tyt.com



1



88



143



Jennifer Cohn @jennycohn1 · 29 Nov 2018

9/ The same vendor executive who ushered in a generation of paperless touchscreen voting in Georgia is pushing HARD to get Georgia and jurisdictions throughout the US to buy the ExpressVote touchscreen ballot markers.



Trump'sREALHistory - #DemCast @heartfulmom

29. Guess who's promoting ES&S Express Vote Barcode System?

She's baaaack! Kathy Rogers...



3



120



172



Jennifer Cohn @jennycohn1 · 29 Nov 2018

10/ As I said, Brian Kemp in Georgia is champing at the bit to buy ES&S's ExpressVote touchscreen ballot markers, which should put all voters on high alert.

Diebold will no longer dominate
elections under Election Systems & Software.

ES&S U.S. Election Systems
Pays for ES&S

ES&S U.S. Election Systems
Pays for ES&S

ES&S U.S. Election Systems
Pays for ES&S

ES&S U.S. Election Systems
Pays for ES&S

ES&S U.S. Election Systems
Pays for ES&S

ES&S U.S. Election Systems
Pays for ES&S

The same year, a laboratory in
Georgia showed that ES&S
ballots - mostly a kind of all-in
one for the state, including Georgia
ballots for the state - were
being used.

By then, Georgia's governor, Son
Perdue, had bought ES&S as the
state's official election system, replacing
Diebold which
permanently ended for good.

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Trump'sREALHistory - #DemCast @heartfulmom

28. 2009: ES&S buys Diebold's Election Systems.

2018: Guess which system Kemp wants to install next?



3



125



164



Jennifer Cohn @jennycohn1 · 29 Nov 2018

Here, @MarilynRMarks1 illustrates what these computer marked summary cards, which almost everyone calls "paper ballots," look like and how they function. The PA agreement would allow these. The most corrupt US election officials seem to want these. twitter.com/marilynmarks1... 11/



Marilyn Marks @MarilynRMarks1

1/ This is the voting system card that Kemp likes and SB403 is permitting. There are barcode votes counted that humans cannot read. The message list to voters that is supposed to list what they voted is not scanned or...

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4



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155



Jennifer Cohn @jennycohn1 · 29 Nov 2018

12/ Kobach's appointee in Kansas's most populous county recommended these barcode ballot markers & got them, despite concerns raised by EI advocates. The machines then scandalized the county by causing enormous problems in the Kansas gubernatorial primary.



Kobach's Kansas Victory Tainted by...Kobach's Ele...

By Jennifer Cohn Kris Kobach, Kansas's top election official, recently declared victory in the highly publicized Republican gubernatorial primary in Kansas, surpassin...
legacy.tyt.com



2



97



130



Jennifer Cohn @jennycohn1 · 29 Nov 2018

13/ We need hand marked paper ballots counted either (a) by hand or (b) on scanners, w/ Risk Limiting Audits & a transparent chain of custody between election night & the audit. Touchscreens only for ADA use and no barcodes on the ballots. The PA agreement requires none of this.



12



198



313



Jennifer Cohn @jennycohn1 · 29 Nov 2018

14/ If Kemp's and Kobach's endorsements aren't enough to convince you, there's also Ohio's new Republican Secretary of State, @FrankLaRose, who authored and pushed through a bill that has enabled funds to go toward the purchase of these things.

Jennifer Cohn @jennycohn1

I knew it. Ohio is joining the dangerous stampede to replace their touchscreen voting machines not with hand marked paper ballots and scanners, but rather with barcoded "summary cards" from touchscreen ballot marking devices like the ES&S ExpressVote. 1/ wcbe.org/post/franklin-...

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4



79



135



Jennifer Cohn @jennycohn1 · 29 Nov 2018

15/ Although few are aware of this impending train wreck caused by LaRose's bill (@LuluFriesdat & I tried to stop the bill earlier this year), many have noted w/ alarm LaRose's recent decision to add Ken Blackwell of Ohio 2004 infamy 2 his transition team.

Bebe 🌊🌊🌊📱☀️🌍 @BebeOhio

OH just elected a new Secretary of State. He has put Ken Blackwell on his transition team. Blackwell was SOS of OH in 2004 and was knee deep in the cheating. Sadly, OH will be really tough for the Dem candidate in 2020.



2



68



112



Jennifer Cohn @jennycohn1 · 29 Nov 2018



16/ Thread about LaRose, Blackwell, and Ohio 2004.

Jennifer Cohn @jennycohn1

People may think that what went down in Ohio in the 2004 presidential election is old news, & that we shouldn't discuss it. They are wrong. The man at the center of it all, former Ohio Secretary of State Ken Blackwell, is BACK & assisting OH's new Secty of State. God help us. 1/ ...

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4



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100



Jennifer Cohn @jennycohn1 · 29 Nov 2018



17/ Related Sourced thread.

Jennifer Cohn @jennycohn1

No, manual audits CANNOT remedy the risks of barcoded summary cards (which vendors and officials call "paper ballots") from "universal use" touchscreen ballot markers, which @DrJillStein's Pennsylvania settlement agreement allows. See thread below. [twitter.com/jennycohn1/sta...](https://twitter.com/jennycohn1/status/1066666666666666666)



7



51



87



Jennifer Cohn @jennycohn1 · 17 Dec 2018



18/ Here is the settlement agreement.

d3n8a8pro7vhmx.cloudfront.net/jillstein/page...



1



12



25



Jennifer Cohn @jennycohn1 · 17 Dec 2018

19/ Here's an article dated AFTER Stein's settlement agreement. As you can see, PA officials interpret the agreement to mean that touchscreen ballot marking systems are allowed in lieu of hand marked ballots & scanners.

Jennifer Cohn @jennycohn1

"While [PA] voters may still end up using an ELECTRONIC SCREEN to make their ballot selections, that machine will spit out a paper record that will then be scanned..." Uh, why?? #VendorBoondoggle cc: @PittCyber @DePasqualePA 1/ cumberlink.com/news/local/com...

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1



19



38



Jennifer Cohn @jennycohn1 · 17 Dec 2018

20/ The only touchscreen ballot marking systems sold for "universal use" are the ones with the barcodes. The most popular version is the ES&S ExpressVote that I keep warning about. Unisyn has one too. And Dominion Voting. All would have the same issues.

ES&S



Dominion



3



22



43



Jennifer Cohn @jennycohn1 · 17 Dec 2018



21/ Proponents of these touchscreen systems sometimes say they are important to avoid problems resolving unclear hand marks during hand recounts or audits. But that simply isn't a sufficient concern given the many glaring problems w/ these systems.

Jennifer Cohn @jennycohn1

In the Minnesota 2008 hand recount, the intent of all but 14 hand marked paper ballots out of 2.9 million was resolved unanimously by a bipartisan panel. 5/ sos.state.mn.us/media/3078/min...

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EXHIBIT 5



CITY COMMISSIONERS OFFICE

Lisa M. Deeley, Chairwoman
Anthony Clark, Commissioner
Al Schmidt, Vice Chair

FOR IMMEDIATE RELEASE
February 20, 2019

Contact: Nick Custodio
Office: 215- 686-3460
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nick.custodio@phila.gov

Philadelphia City Commissioners Approve New Voter-Verifiable Paper Ballot Voting System and New Electronic Poll Books

Philadelphia meets Governor's deadline and secures future elections

Philadelphia, PA – This morning at their regularly scheduled meeting the Philadelphia City Commissioners voted to approve a new voter-verifiable paper ballot voting system to be implemented in the November 2019 General Election. In April of 2018, the Department of State, in conjunction with Governor Wolf, informed all 67 of Pennsylvania's counties that they must have a voter-verifiable paper record voting system selected no later than December 31, 2019, and preferably in place for use in the November 2019 General Election. With their selection, this morning, of the Election Systems & Software, LLC ExpressVote XL the City of Philadelphia has met the Governor's selection deadline.

"Today is a momentous day," said City Commissioner Chair Lisa Deeley. "Today, we voted to give the City's voters a secure and resilient system with an auditable voter-verifiable paper-ballot. We look forward to the next steps which are educating our poll workers and voters. I hope everyone will come out to our public trainings." Vice Chair, Commissioner Al Schmidt echoed her comments saying that "It's critically important that we make voting easier and equally accessible for all Philadelphians while also considering the need for a secure, resilient voting system. Every voter in Philadelphia should be confident that their ballots are cast securely, and their votes are counted accurately, and our new, auditable paper ballot system will help ensure that."

The ExpressVote XL is certified by both the federal Election Assistance Commission and the Pennsylvania Department of State. All systems certified by the Department of State meet the requirements of the security experts at the University of Pittsburgh and The Blue Ribbon Commission On Pennsylvania's Election Security. The ExpressVote XL will also produce a paper ballot with human readable text, that can be verified by a voter before they cast their vote, can be counted in the event of a recount, and can be audited as per the new risk limiting audit procedures being developed by the state.

In her remarks before the vote, Commissioner Deeley applauded activists who supported hand-marked paper ballots for their passion and their feedback, which contributed to the process. However, the Commissioners choose to stick with an all machine method of voting because of voters' preference for the current style of voting on full-faced machines, the short timeline to retrain poll workers and voters, and the concerns of disability advocates that implementing hand-marked paper ballots would treat voters with disabilities unequally by requiring them to use a separate voting system.

The Commissioners also voted to select KNOWiNK, LLC as the vendor for the new electronic poll books. This modernization of the check-in process will replace the old paper poll books, speed up check-in time, and allow Philadelphia to adapt to any proposed changes in election law. The electronic poll books will be implemented in the November 2019 General Election along with the new voting system. The Commissioners will begin training the poll workers this summer and begin public demonstrations of the new systems as soon as possible.

The Philadelphia City Commissioners are a three-member bipartisan board of elected officials in charge of elections and voter registration for the City of Philadelphia. The three Commissioners are Chairwoman Lisa Deeley (D), Anthony Clark (D), and Vice Chair Al Schmidt (R).

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